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Ontario Geological Survey
Open File Report 6149

Report of Activities, 2004 Resident Geologist Program

Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts

2005

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ONTARIO GEOLOGICAL SURVEY

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Report of Activities, 2004
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Timmins Regional Resident Geologist Report:
Timmins and Sault Ste. Marie Districts

by

B.T. Atkinson, M. Hailstone, G.Wm. Seim, A.C. Wilson, D.M. Draper, V.J. Bulman and A. Pace

2005

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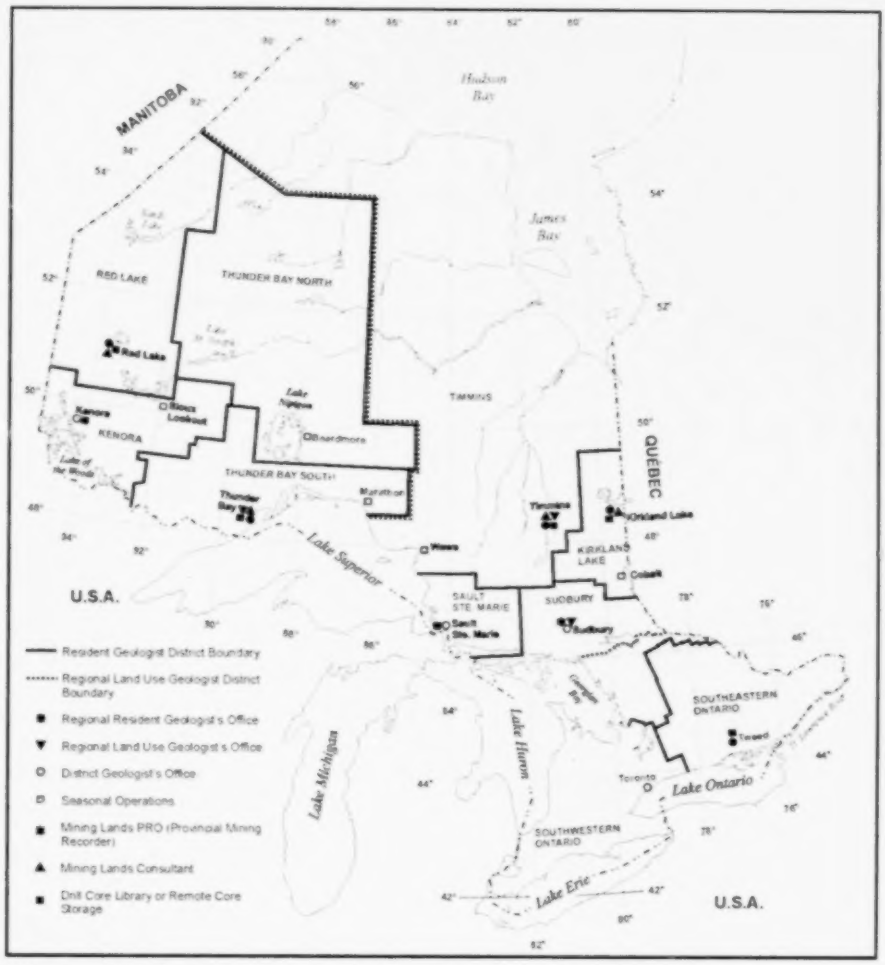

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ONTARIO GEOLOGICAL SURVEY

RESIDENT GEOLOGIST PROGRAM

REPORT OF ACTIVITIES - 2004

TIMMINS REGIONAL RESIDENT GEOLOGIST REPORT

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Timmins Regional Resident Geologist (Timmins District)–2004

by

B.T. Atkinson, G.Wm. Seim, A.C. Wilson, D.M. Draper and V.J. Bulman

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Timmins Regional Resident Geologist (Timmins District)–2004

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INTRODUCTION

With a dramatic upswing in the price of both precious and base metals and mineral commodities over the year, a number of mineral properties were reactivated and re-evaluated. Exploration emphasis included diamonds in the Hudson Bay and James Bay lowlands and around Wawa. Gold was sought throughout the Abitibi and Michipicoten while base metals were sought around Timmins and at McFaulds Lake in the James Bay Lowlands where Spider Resources Inc. and other companies continued exploring new volcanic-hosted massive sulphide discoveries. The Montcalm Mine achieved startup production of nickel ore and the Stock Mine achieved limited gold production. A bulk sample of nickel ore from the Alexo Mine was shipped to Sudbury, Ontario, for processing. Talc production from the Penhorwood Mine and phosphate from the Kapuskasing Phosphate Operations continued throughout the year; both these operations expanded production to meet growing market demand for mineral commodities. The Pamour Mine was reactivated as an open-pit mining operation in preparation for supplying ore to the Dome mill. After 95 years of continuous mining production, the underground operations of the Dome Mine were finally halted on May 28th, 2004, but open-pit operations continued throughout the year. Gold from the Hoyle Pond Mine continued to be blended and milled at the Dome Mill.

De Beers Canada Inc. commenced the permitting process for the Victor diamond project, located 90 km west of Attawapiskat where they anticipate the construction of Ontario's first diamond mine at a capital cost of $820 million. Nearby, Spider Resources Inc. and KWG Resources Inc. have identified additional diamond-bearing kimberlite in the area.

Inspired by significant molybdenum price increases, local prospectors have rediscovered occurrences of molybdenite mineralization in the Timmins District.

Exploration expenditures in the Timmins District exceeded $80 million for the year, reflecting work done on the many claims staked last year. In comparison, 2004 saw a significant decrease in staking activity but the number of active claims remained high. Claim staking activities are presented in Table 1, and exploration activities are listed in Tables 11 and 12.

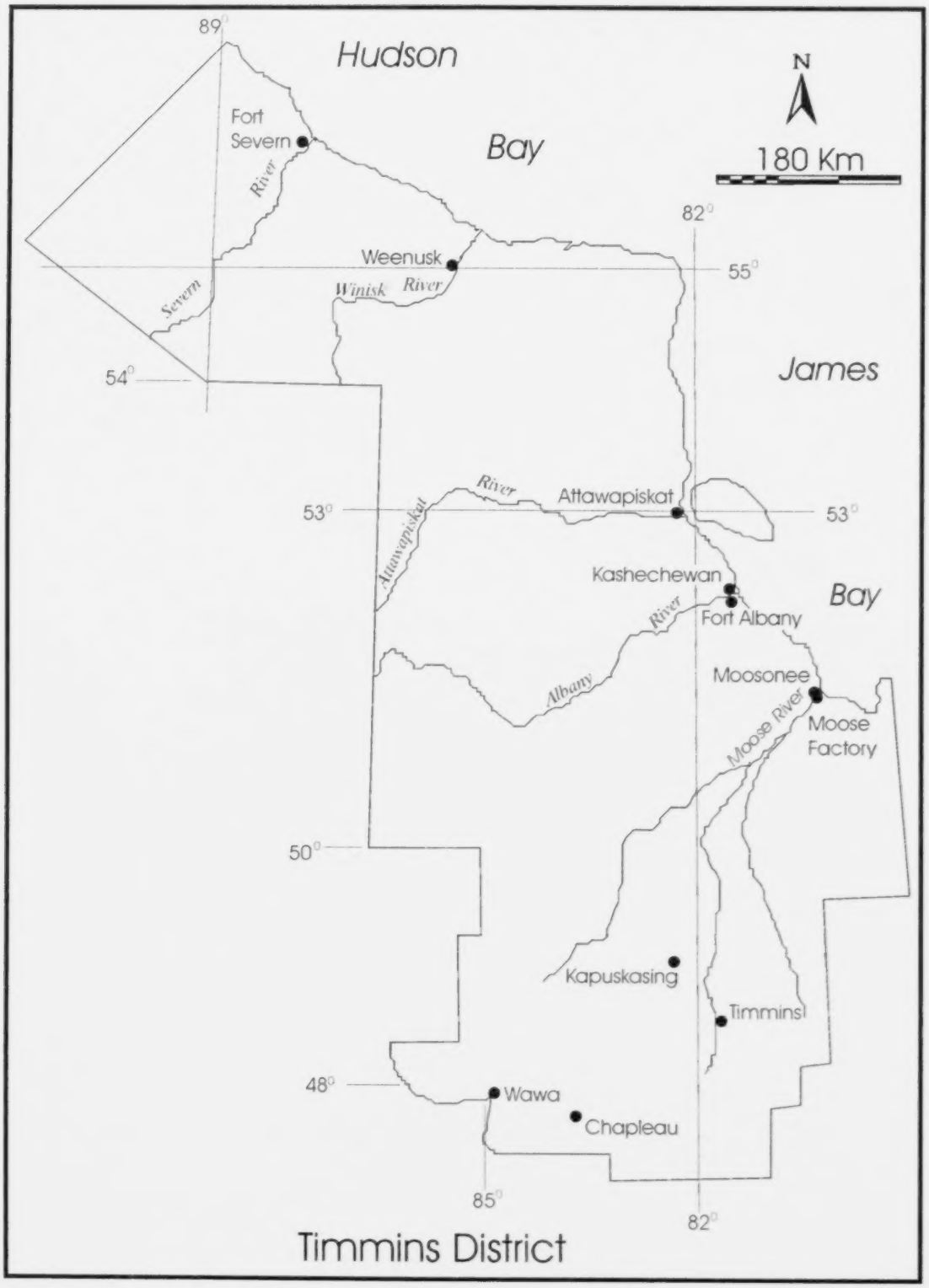


Figure 1. Timmins Regional Resident Geologist District

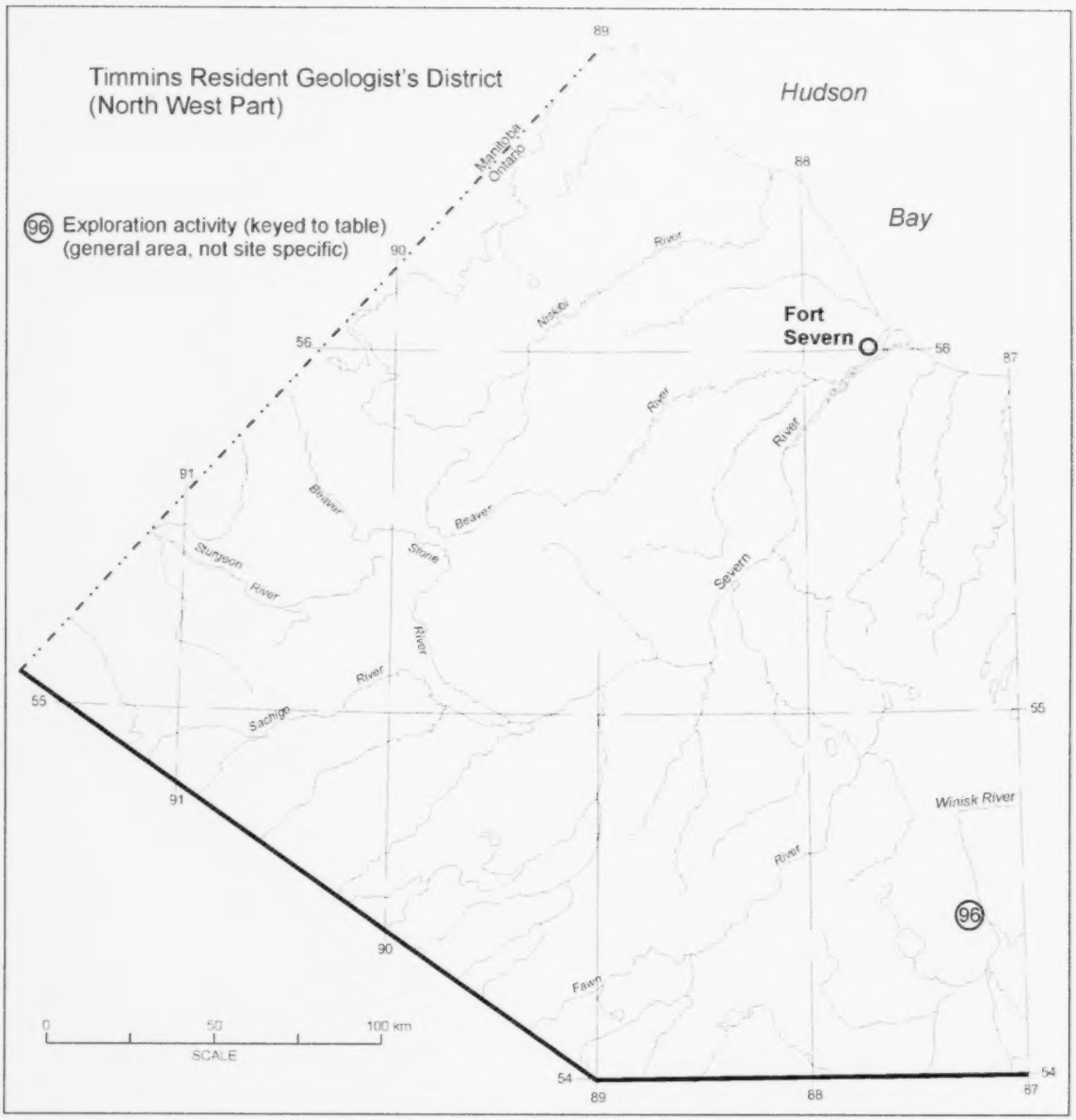


Figure 2a. Timmins Regional Resident Geologist District (North West Part). Exploration programs keyed to Table 11.

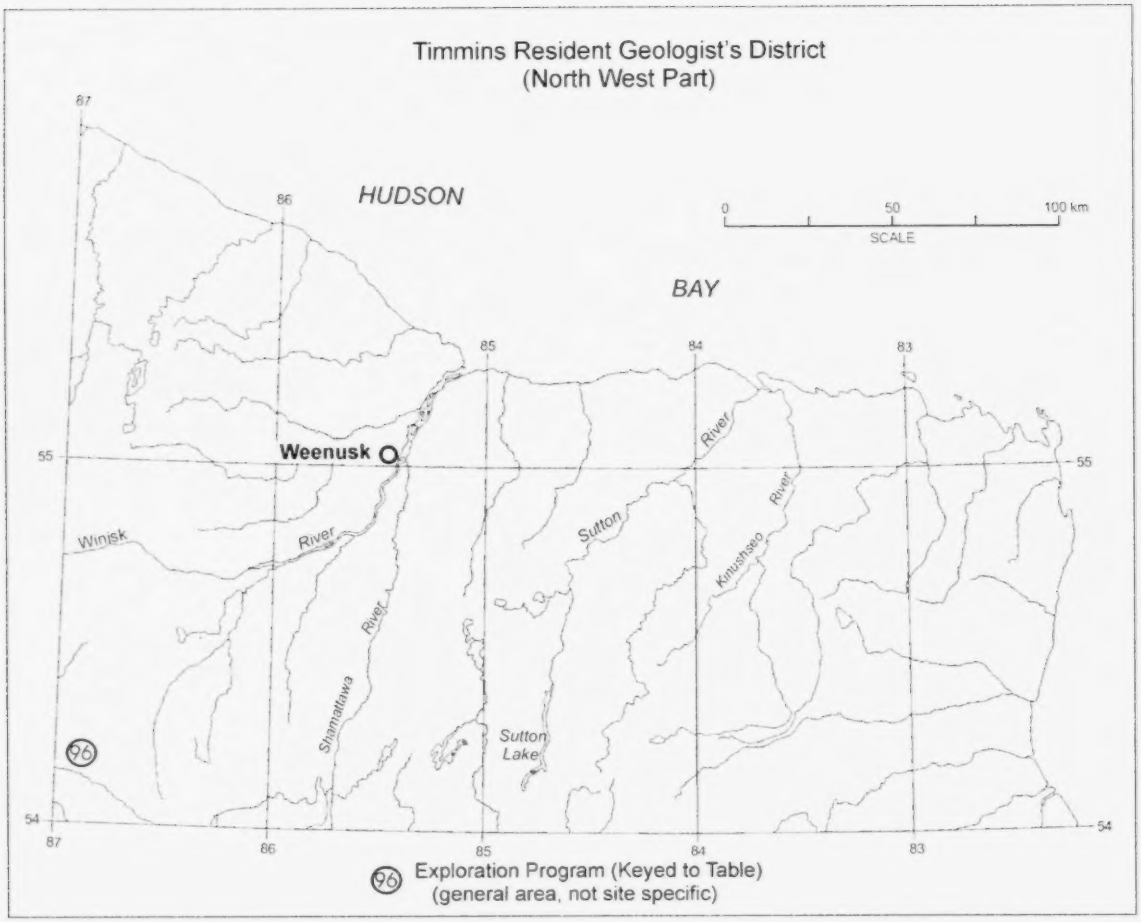


Figure 2b. Timmins Regional Resident Geologist District (North East Part). Exploration programs keyed to Table 11.

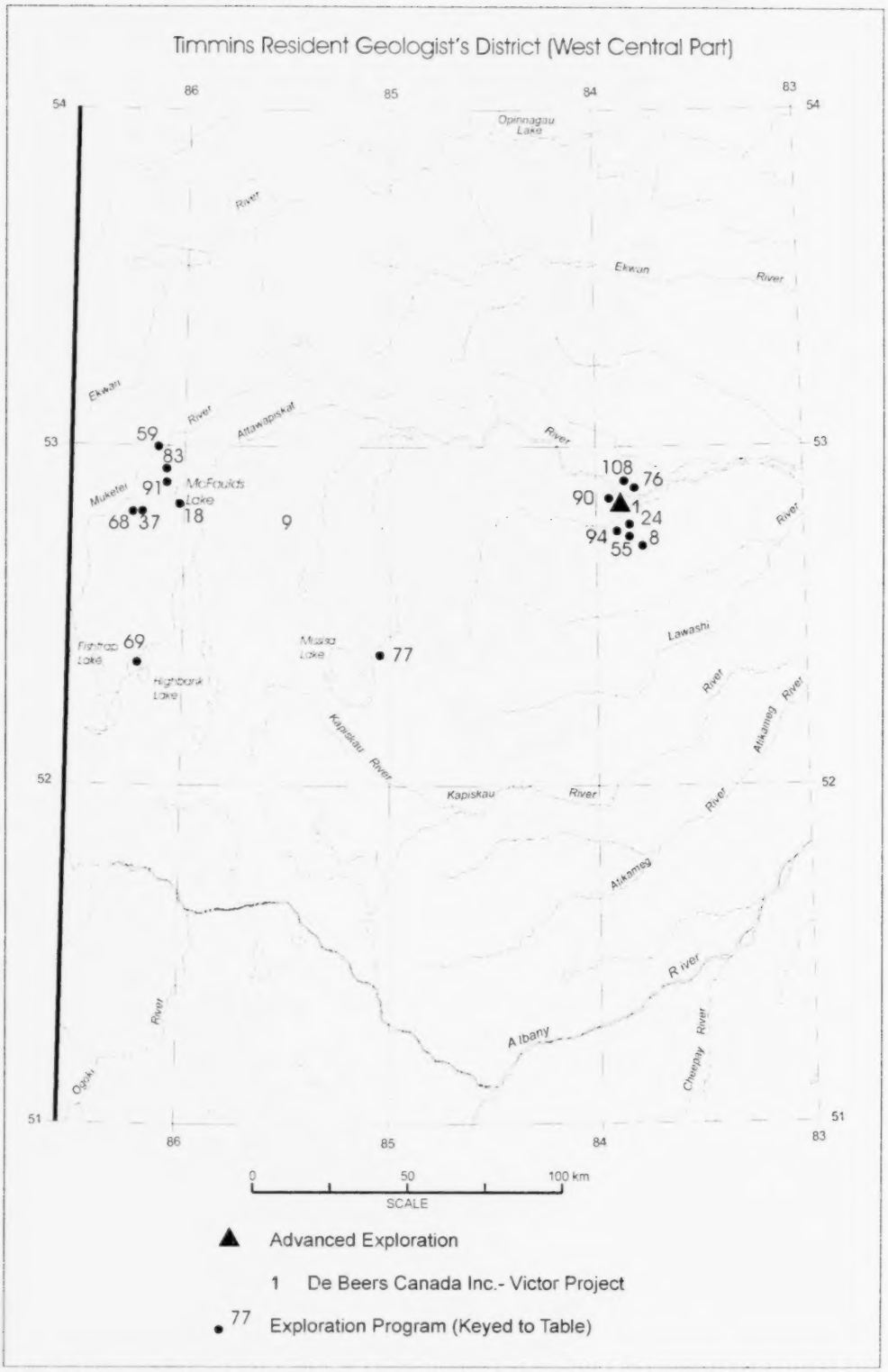


Figure 2c. Timmins Regional Resident Geologist District (West Central Part). Exploration programs keyed to Table 11.

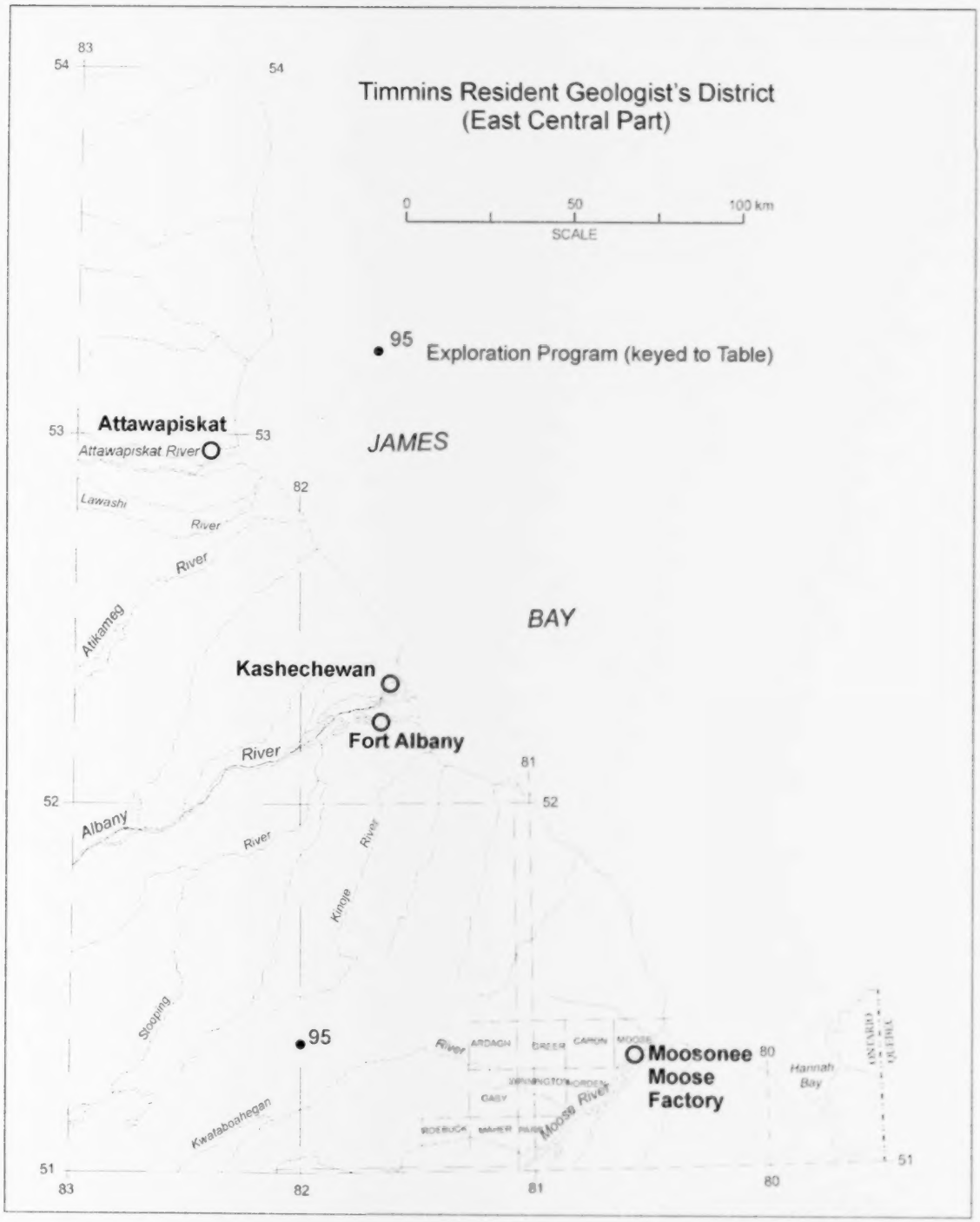


Figure 2d. Timmins Regional Resident Geologist District (East Central Part). Exploration programs keyed to Table 11.

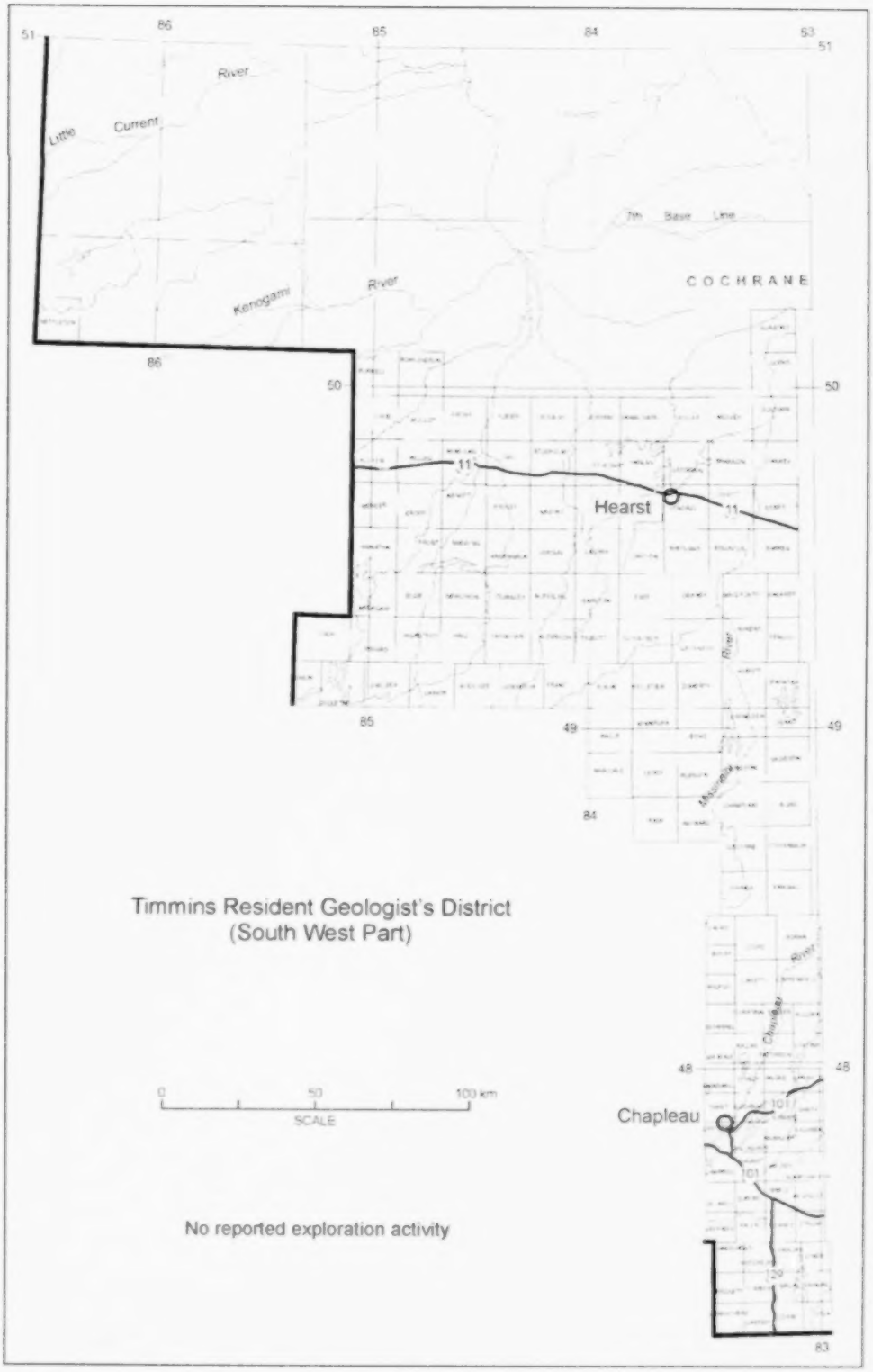
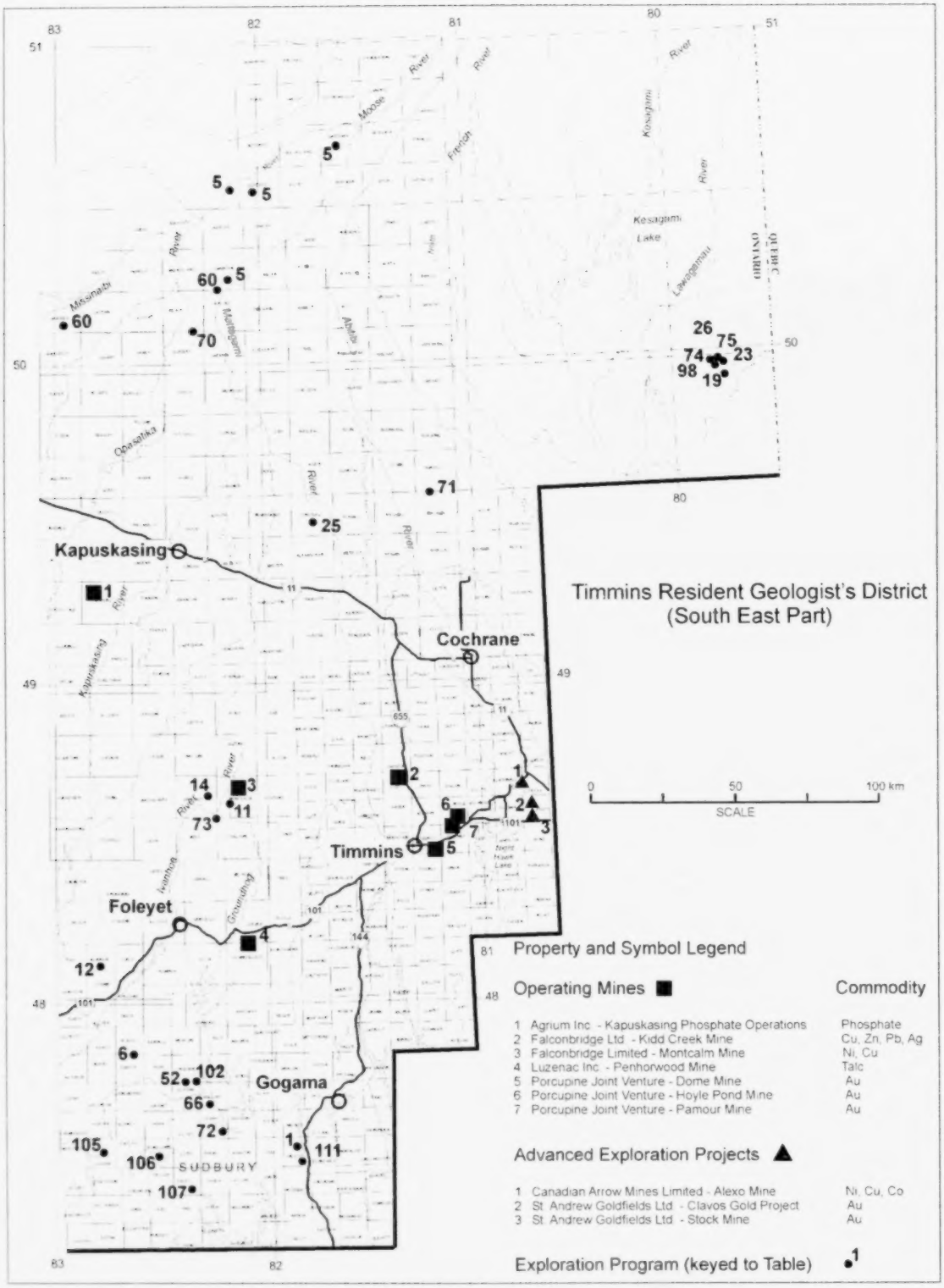


Figure 2e. Timmins Regional Resident Geologist District (South West Part)


Timmins Resident Geologist's District
(South East Part)
Kapuskasing
Cochrane
Timmins
Foleyet
Gogama
SUDBURY
0
50
100 km
SCALE
Property and Symbol Legend
Operating Mines
Commodity
1 Agrium Inc - Kapuskasing Phosphate Operations Phosphate
2 Falconbridge Ltd - Kidd Creek Mine Cu, Zn, Pb, Ag
3 Falconbridge Limited - Montcalm Mine Ni, Cu
4 Luzenac Inc - Penhorwood Mine Talc
5 Porcupine Joint Venture - Dome Mine Au
6 Porcupine Joint Venture - Hoyle Pond Mine Au
7 Porcupine Joint Venture - Pamour Mine Au
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1 Canadian Arrow Mines Limited - Alexo Mine Ni, Cu, Co
2 St. Andrew Goldfields Ltd - Clavos Gold Project Au
3 St. Andrew Goldfields Ltd - Stock Mine Au
Exploration Program (keyed to Table)

Figure 2f. Timmins Regional Resident Geologist District (South East Part). Exploration programs keyed to Table 11.

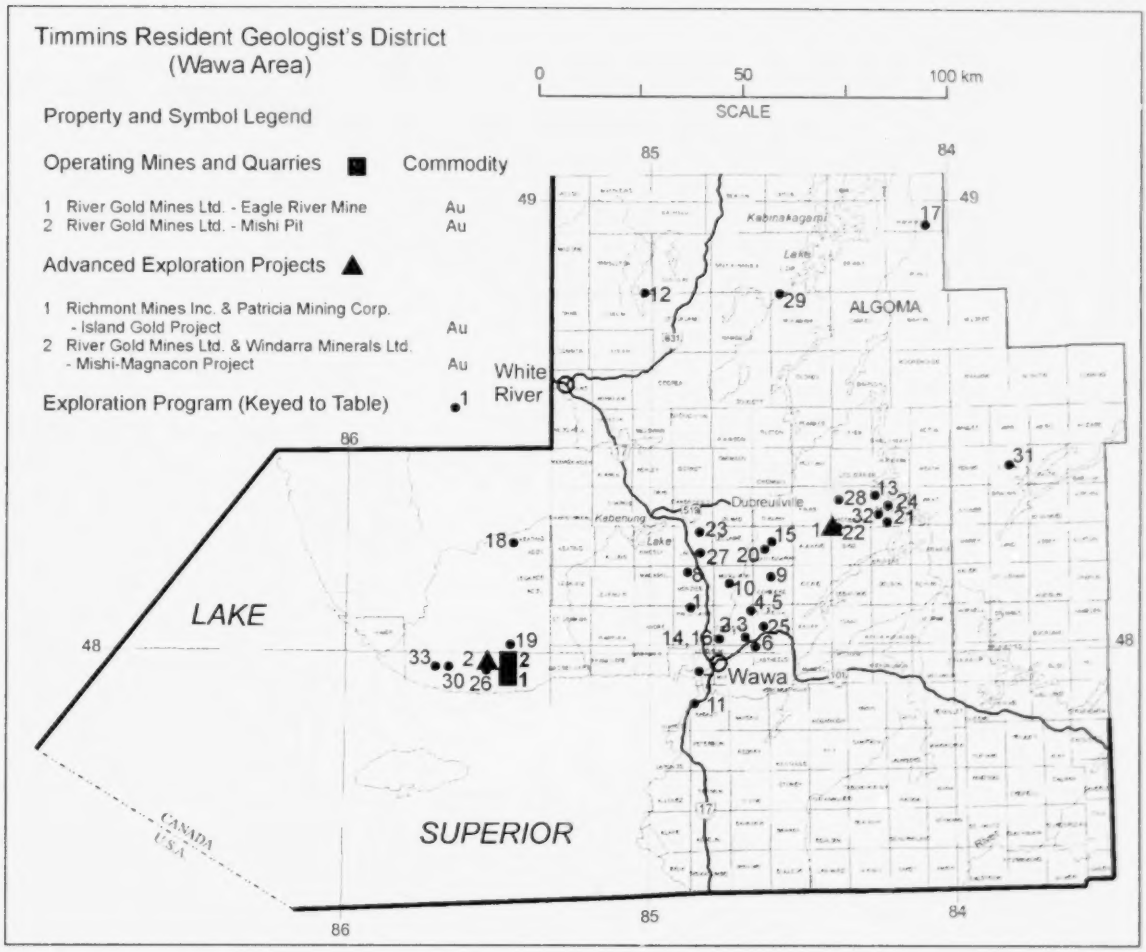

Figure 2g. Timmins Regional Resident Geologist District (Wawa Area). Exploration programs keyed to Table 12.

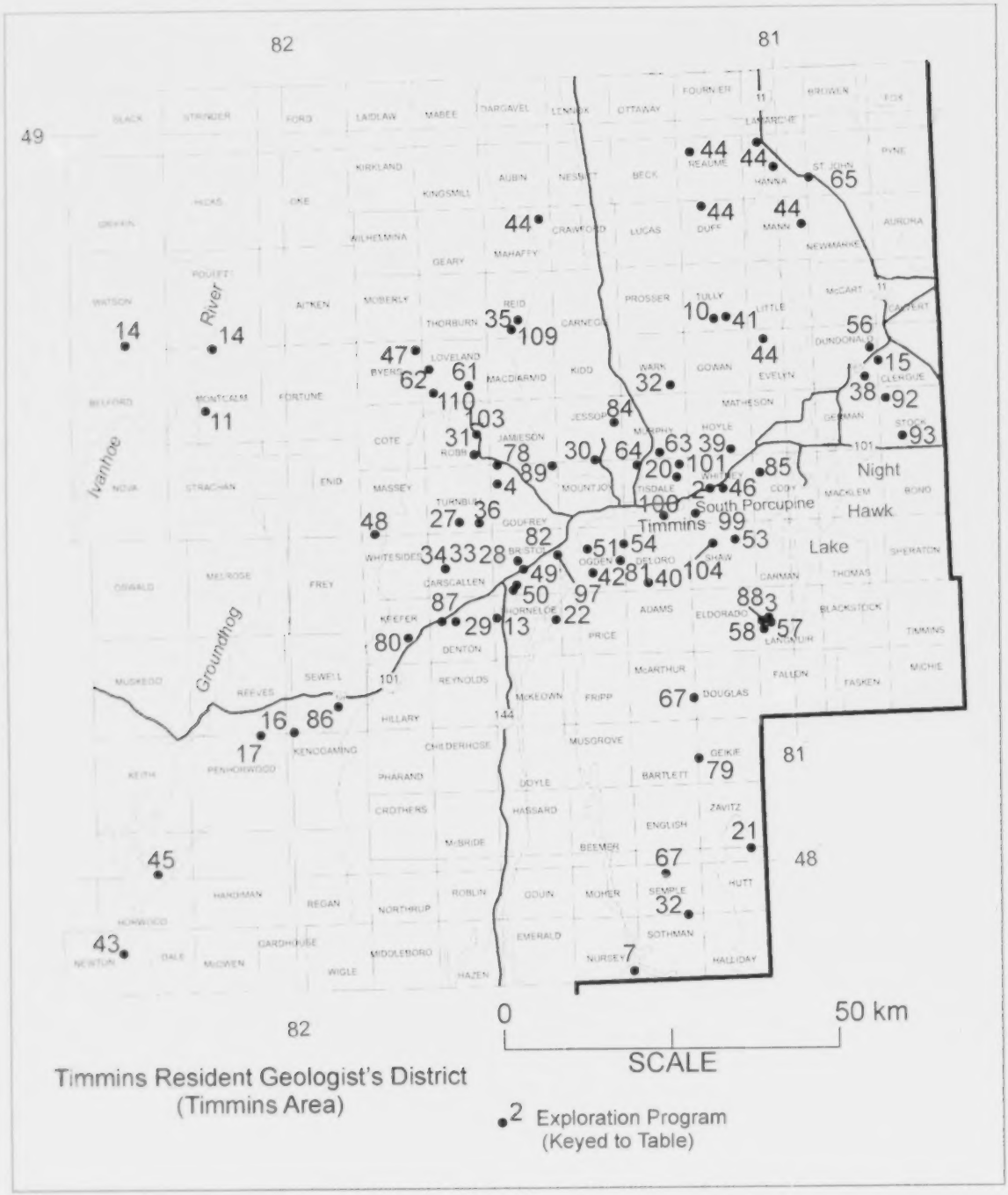

Figure 3. Timmins Regional Resident Geologist District (Timmins Area). Exploration programs keyed to Table 11

Table 1 Summary of claims recorded and assessment work credit in the Timmins District, 1995 – 2004

Year	Claim Units Recorded	Claim Units Cancelled	Claim Units Active	Diamond Drilling ($)	Physical Work ($)	Geotechnical Work* ($)	Total ($)
2004	17 377	1 280	56 478	N/A	N/A	N/A	N/A
2003	28 1543	18 860	57 384	N/A	N/A	N/A	5 728 049
2002	11 423	14 705	39 964	N/A	N/A	N/A	5 419 054
2001	18 258	11 759	42 835	N/A	N/A	N/A	4 996 755
2000	11 035	15 723	35 905	N/A	N/A	N/A	4 946 371
1999	12 312	16 557	42 270	N/A	N/A	N/A	10 665 577
1998	12 642	11 300	46 515	N/A	N/A	N/A	17 308 110
1997	10 771	16 908	45 173	N/A	N/A	N/A	10 707 864
1996	13 859	15 876	50 739	4 788 424	216 812	3 288 156	8 418 072
1995	14 376	7 769	60 705	2 003 632	202 191	2 742 497	5 052 359

** As of 1992, Geological and Geophysical Survey data are combined as Geotechnical Work*
N/A Not available, figures no longer reported separately as of 1997.

MINING ACTIVITY

The locations of the producing mines are indicated on Figures 2f and 2g and current mine production and reserves are indicated in Table 2. Historical gold production for Timmins and Wawa is presented in Tables 3 and 4; base metal production for Timmins is presented in Table 5.

Base Metal Mining

FALCONBRIDGE LIMITED – KIDD CREEK MINE

Kidd Creek Mine production amounted to 2 093 662 tonnes of ore grading 2.09% copper, 5.04% zinc, 0.20% lead and 88 g/t silver. The daily milling rate was 5651 tonnes.

Ore reserves at year-end 2004 are:

Category	Tonnes	Copper %	Zinc %	Lead %	Silver g/t
Proven	14 287 000	1.98	5.72	0.21	63
Probable	3 780 000	1.35	7.58	0.18	47
Measured and Indicated	388 000	1.62	6.57	0.28	45
Inferred Resources	15 346 000	2.99	4.58	0.28	82

Mining operations included 9340 m of drifting and 1220 m of raising in both the Kidd and Mine D. Mining was active on 18 headings with 34 levels active in the Kidd Mine and 120 active headings on 15 levels in Mine D. Diamond drilling included 95 925 m of underground drilling, consisting of 90 521 m of ore definition drilling, 2395 m of exploration drilling and 3009 m of utility drilling. As a result of primary ore definition drilling, 780 000 tonnes were added to the mineral resources in Block 3 of Mine D.

Development on Mine D, which extends beneath the 6800 level, continued with the sinking of Number 4 shaft to the 8800 level and ramping currently down to the 8600 level. Cementation Skanska Canada Inc. is the mining contractor working on Mine D. Production commenced from the first block of Mine D (6800 to 7500 level) and the 8800 level station has been completed. Mining methods include long-hole–open-stope with delayed backfill that accounts for 97% of the mining operations. Sublevel cave mining accounts for the remaining 3% of mine production.

The Kidd Creek Mine has a labour force of 416 and an additional 773 employees work at the Kidd metallurgical site. M. Boucher is the Mine Manager, D. Pickard is the Metallurgical Site Manager and D. Duff is Manager of Geology.

FALCONBRIDGE LIMITED – MONTCALM MINE

Mining operations commenced at the Montcalm Mine on January 1, 2004. Ore is mined from underground operations via a decline ramp, then trucked from the mine site to the Kidd Metallurgical Site in Timmins. Production amounted to 214 000 tonnes at a grade of 1.32% nickel and 0.68% copper. The daily milling rate was 2050 tonnes.

Ore reserves at year end 2004 are:

Category	Tonnes	Nickel %	Copper %
Proven	3 162 000	1.56	0.75
Probable	1 724 000	1.44	0.70
Total	4 885 000	1.52	0.73

Resources are 700 000 tonnes grading 1.70% nickel and 0.70% copper.

Mining operations included 3834 m of drifting and 474 m of raising. There were 5 active mine headings on 3 levels. Mining is done by open blast hole method. Diamond drilling of 23 189 m was completed for ore definition. The Montcalm Mine has a workforce of 104 people. J. McDonald is the Mine Manager.

Gold Mining

The Timmins operations of Placer Dome (CLA) Limited and Kinross Gold Corporation were merged in 2002 and are now part of the Porcupine Joint Venture (PJV). Placer Dome is the operator of the PJV and owns 51% while Kinross owns the remaining 49%. Both the Dome Mine and the Hoyle Pond Mine operated throughout the year. The underground mining operations at the Dome Mine were terminated in May. The Hoyle Pond Mine operated as an underground mine with the ore being trucked to the Dome mill for gold recovery. By year end, 150 tonne mine trucks were hauling ore from the Pamour Mine via the new mine haul road to the Dome mill.

PORCUPINE JOINT VENTURE – DOME MINE

Details of ore production at the Dome Mine were unavailable at time of writing. Ore reserves for the combined PJV operations at the end of 2003 were:

	Tonnes	Grade (g/t gold)	Ounces
Proven:	9 501 000	1.4	425 000
Probable:	18 769 000	1.9	1 124 000
Total	28 270 000	1.7	1 549 000

Underground mining operations ceased on May 28th, 2004 due to depletion of ore. The Dome Mine has been in continuous production since 1910. The PJV operations employ 648 people. D. Gagnon is the Mine Manager and S. Price is the Chief Geologist.

PORCUPINE JOINT VENTURE – HOYLE POND MINE

Details of ore production at the Hoyle Pond Mine were unavailable at time of writing.
Ore reserves at the end of 2002 were:

	Tonnes	Grade (g/t gold)	Ounces
Proven:	328 000	13.00	137 090
Probable:	560 000	12.43	223 795
Total	888 000	12.64	360 885

PORCUPINE JOINT VENTURE – PAMOUR MINE

The Porcupine Joint Venture worked on re-developing the Pamour Mine, formerly operated by Royal Oak Mines Ltd. and closed in 1999, as a large open-pit mine operation. Over the last 2 years, the existing mine and mill infrastructure was removed and site preparation continued for developing the mine as a large open-pit operation. Permitting and engineering work on re-routing Highway 101 to the south of Three Nations Lake, and diking off the north part of that lake to allow development of the open pit continued. Construction of a 14 km long haul road from the Pamour Mine to the Dome mill was completed and ore was being trucked from the Pamour Mine to the Dome mill.

RIVER GOLD MINES LTD. – EAGLE RIVER MINE

The Eagle River mine is located on the north shore of Lake Superior, approximately 50 km west of the town of Wawa, in the Mishibishu Lake greenstone belt.

Gold production for the year amounted to 66 000 ounces from 271 105 tons of ore milled. The grade was 0.243 ounce per ton gold and the milling rate was 775 tons per day. The mill achieved a gold recovery of 97%.

Ore reserves at the end of 2004 were:

Category	Tons	Grade (ounce per ton gold)	Ounces
Proven	455 000	0.324	147 420
Probable	507 000	0.281	142 467
Total	962 000	0.302	290 000

Measured and indicated resources are 551 000 tons at a grade of 0.202 ounce gold per ton.

Mining operations included 3821 m of waste development and 2004 m of ore development mining. There were 52 active ore headings and 64 active waste headings in the underground mine operations. Mining methods were largely converted from long-hole mining to shrinkage mining, which now accounts for 80% of the ore production.

Underground diamond drilling amounted to 30 000 m, including 24 000 m of ore definition drilling and 6000 m of exploration drilling. No surface diamond drilling was done during the year.

The recently discovered New Breccia Zone was developed on three levels over 60 m. It contains 300 000 tons of gold mineralization at a grade of 0.35 ounce gold per ton.

The work force at the mine consists of 200 employees plus 38 on-site contractors. R. Price is the Mine Manager and J. Plecash is the Chief Geologist.

Industrial Minerals

AGRIUM INC. – KAPUSKASING PHOSPHATE OPERATIONS

Agrium Inc.'s Kapuskasing Phosphate Operations, located 40 km southwest of Kapuskasing, operated throughout the year. Production of phosphate amounted to 4 362 159 m^3 that produced 2 009 642 tonnes (dry) of mill feed. The mill produced 1 062 427 tonnes (dry) concentrate at a grade of 36.7% P_2O_5. The phosphate ore is a residual mineral sand derived from the natural weathering of apatite-rich carbonatite of the Cargill Carbonatite Complex. The Kapuskasing Phosphate Operations mine the apatite sand in an open-pit truck-and-shovel operation and concentrate the apatite on site. The apatite concentrate is transported by rail to Red Water, Alberta for the production of fertilizer.

Year-end ore reserves were not available at the time of writing. At the end of 2003, reserves were:

	Tonnes	Grade (P_2O_5)
Proven	19 550 000	
Probable	20 650 000	
Total	40 200 000	22.7%

During the year, ore definition drilling amounted to 16 759 m and exploration diamond drilling was 5385 m. The exploration drilling better defined the continuity of the southern extension of the Main Zone and delimited the economic extent of the open pit to the northwest. The workforce includes 74 contract mine employees and 79 mill employees. B. Neeser is the Plant Manager.

LUZENAC INC. – PENHORWOOD MINE

Production from Luzenac Inc. Penhorwood Mine amounted to 192 400 tonnes for the year at a grade of 47.2% talc. A total of 202 400 tonnes of talc ore was milled at a rate of 660 tonnes per day. The mill recovery was 62%.

Ore reserves at 2004 year end were:

	Tonnes	Grade (talc)
Proven	7 860 000	
Probable	8 200 000	
Total	16 060 000	47.2%

The Penhorwood Mine is an open-pit operation that is mined on a seasonal contract basis. Waste rock dumps were rehabilitated during the year. The Penhorwood Mine employs 23 people and 22 people work at the concentrator in Timmins. K. Tyler is the Mine Manager and K. Kiedock is the Concentrator Manager.

ADVANCED EXPLORATION

Canadian Arrow Mines Limited – Alexo Mine

Canadian Arrow Mines Limited began mining a 20 000 tonne bulk sample of nickel-copper-bearing ore from the Alexo Mine and the Kelex Zone in Dundonald and Clergue townships. The Alexo property is located 45 km northeast of Timmins and 15 km southwest of Iroquois Falls. Highway 67 provides access to the property. Claims covering the property are owned by Legendary Ore Mining Corporation, which is a wholly owned subsidiary of Canadian Arrow Mines Ltd.

Open pit, bulk sample mining operations included the development of three pits on the property. Combined, the mining operations produced 17 398.44 tonnes of nickel ore at a grade of 2.3% Ni, 0.23% Cu and 0.07% Co. The Alexo pit expanded an existing small, previously worked open pit. The Alexo pit was excavated to a depth of 40 m with the removal of approximately 11 000 tonnes of nickel ore and 300 000 tonnes of waste rock composed of serpentinized peridotite.

Two open pits were developed on the Kelex Zone. The Kelex West pit was excavated to a depth of 20 m and produced 2000 tonnes of nickel ore and 50 000 tonnes of waste, including clay overburden and serpentinized komatiite. The Kelex Central West pit was excavated to a depth of 35 m. This pit contributed 5800 tonnes of nickel ore to the bulk sample program and produced 200 000 tonnes of clay overburden with minor serpentinized komatiite and footwall andesite as waste. All nickel ore produced from the three pits was trucked to the Falconbridge Limited - Strathcona mill in Sudbury for milling, smelting and refining.

Exploration diamond drilling amounted to 9640 m with 92 holes completed on the Kelex Zone and 26 holes completed on the Alexo eastern plunge extension. Most of the drilling was directed towards ore definition. High resolution ground magnetic surveys and pulse electromagnetic surveys (PEM-SQUID) were completed over a 47 km grid on the Alexo property (P. Davis, Canadian Arrow Mines Limited, written communication, 2005).

Table 2. Mine production and reserves in the Timmins District.

Mine	Production in 2003		Production in 2004		Reserves at end of 2004	
	Tonnage @ Grade	Total Commodity	Tonnage @ Grade	Total Commodity	Tonnage	Grade
Agrium Inc., Kapuskasing Phosphate Operations	1 760 000 tonnes @ 36%	979 500 tonnes P_2O_5	2 009 642 tonnes	1 062 427 tonnes @ 36.7% P_2O_5	N/A	N/A
Falconbridge Limited, Kidd Creek Mine	2 108 493 tonnes @ 2.3% Cu, 4.27% Zn, 58 g/t Ag		2 093 662 tonnes @ 2.09% Cu, 5.04% Zn, 0.20% Pb, 88 g/t Ag		18 067 000 tonnes incl: 14 287 000 proven, 3 780 000 t probable, 388 000 t measured and indicated, and 15 346 000 t inferred	1.98% Cu, 5.72% Zn, 0.21% Pb, 63 g/t Ag
Falconbridge Limited, Montcalm Mine			214 000 tonnes @ 1.32% Ni, 0.68% Cu	2825 t Ni 1455 t Cu	4 885 000 t proven and probable and a resource of 700 000 t	1.52% Ni, 0.73% Cu 1.70% Ni, 0.70% Cu
Luzenac Incorporated, Penhorwood Mine	201 480 tonnes @ 46.5% talc	57 150 tonnes talc	192 400 tonnes @ 47.2% talc	59 230 tonnes talc	7 800 000 tonnes proven, 8 200 000 tonnes probable	47.2% talc (recoverable)
Porcupine Joint Venture - Dome Mine	3 697 657 tonnes @ 2.85 g/t Au	314 759 ounces	N/A		N/A	
Porcupine Joint Venture - Hoyle Pond Mine	374 463 tonnes @ 12.27 g/t Au	135 018	N/A		N/A	
River Gold Mines Ltd., Eagle River Mine	235 000 tons @ 0.265 opt Au	70 903 ounces	271 105 tons @ 0.243 opt Au	66 000 oz Au	962 000 tons incl. proven 455 000 tons @ 0.324 opt Au, probable 507 000 tons @ 0.281 opt Au	0.302 opt Au
River Gold Mines Ltd., Mishi Mine	29 600 tons @ 0.11 opt Au	3267 ounces	49 000 tons @ 0.104 opt Au	5086 oz Au	1 150 000[1] tons	0.15 opt Au

Notes: Abbreviations: N/A – Data not available; g/t – grams per tonne; opt – ounces per ton; [1] Indicated resources.

Table 3. Gold Production in the Timmins Regional Resident Geologist District to the end of 2003.

Mine Name	Township	In Production	Tons Milled	Oz. Au	Grade[1]
Ankerite/March	Deloro	1926-1935	317 769	61 039	0.19
Aquarius	Macklem	1984, 1988-89	139 634	27 117	0.19
Aunor Pamour(#3)	Deloro	1940-1984	8 482 174	2 502 214	0.30
Banner	Whitney	1927-28, -33, -35	315	670	0.13
Bell Creek	Hoyle	1987-91, 1992-94	576 017	112 739	0.496
Bonetal	Whitney	1941-51	352 254	51 510	0.15
Bonwhit	Whitney	1951-54	200 555	67 940	0.34
Broulan Porcupine	Whitney	1939-1953	1 146 059	240 660	0.21
Broulan Reef Mine	Whitney	1915-65	2 144 507	498 932	0.23
Buffalo Ankerite	Deloro	1926-53, 78	4 993 929	957 292	0.19
Cincinnati	Deloro	1914, 1922-24	3 200	736	0.23
Concordia	Deloro	1935	230	16	0.07
Conlarum/Carlum	Tisdale	1913-18, 1928-61	4 464 006	1 109 574	0.25
Crown	Tisdale	1913-21	226 180	138 330	0.61
Davidson-Tisdale	Tisdale	1918-20, 1988	53 221	2 438	0.26
Delnite	Deloro	1937-64	3 847 364	920 404	0.20
(open pit)		1987-88	56 067	3 602	0.77
DeSantis	Ogden	1933, 39-42, 61-64	196 928	35 842	0.18
Detour Lake	Sunday Lake Area	1983-99	16 005 557	1 781 858	0.111
Dome	Tisdale	1910-2003	91 717 560	15 156 616	0.165
Faymar	Deloro	1940-42	119 181	21 851	0.180
Fuller (Vedron)	Tisdale	1940-44	44 028	6 566	0.15
Gillies Lake	Tisdale	1921-31, 35-37	54 502	15 278	0.28
Goldhawk	Cody	1947	636	53	0.08
(open pit)		1980	40 000	3 967	0.10
Halcrow-Swayze	Halcrow	1935	211	40	0.19
Hallnor (Pamour #2)	Whitney	1938-68, 81	4 226 419	1 690 560	0.40
Hollinger- Schumacher	Tisdale	1915-1918	112 124	27 182	0.24
Hollinger	Tisdale	1910-68	65 778 234	19 327 691	0.29
Pamour Timmins Property		1976-88	2 615 866	182 058	0.07
Hoyle – Falconbridge	Whitney	1941-44, 46-49	725 494	71 843	0.10
Hoyle Pond	Hoyle	1985-2003	4 920 817	1 900 943	0.385
Hugh-Pam	Whitney	1926, 48-65	636 751	119 604	0.19
Jerome	Osway	1941-43, 56	335 060	56 893	0.17
Joburke	Keith	1973-75, 79-81	440 117	43 571	0.10
Kinghridge/Gomak	Chester	1935-36	1 387	98	0.07
Marlhill	Hoyle	1989-91	156 800	30 924	0.199
McIntyre Pamour Schumacher	Tisdale	1912-88	37 634 691	10 751 941	0.29
(ERG Tailings recovery)		1988-89	2 549 189	18 260	
McLaren	Deloro	1933-37	876	201	0.23
Moneta	Tisdale	1938-43	314 829	149 250	0.47
Naybob (Kenilworth)	Ogden	1932-64	304 100	50 731	0.17
Nighthawk	Macklem	1995-99	1 479 607	175 803	0.12
Owl Creek	Hoyle	1981-89	1 984 400	236 880	0.12
Pamour #1 (Incl. pits 3, 4 & 7)Hoyle	Whitney	1936-99	45 795 863	4 078 525	0.09
Pamour (other sources)	Whitney	1936-99	7 416 634	676 645	0.091
Paymaster	Deloro	1915-19, 22-66	5 607 402	1 192 206	0.21
Porcupine Lake (Hunter)	Whitney	1937-40, -44	10 821	1 360	0.13
Porcupine Peninsular	Cody	1924-27, -40, -47	99 688	27 354	0.27
Preston	Tisdale	1938-68	6 284 405	1 539 355	0.24
Preston NY	Tisdale	1933	2 800	153	0.05
Preston Porcupine Pet	Deloro	1914-15	NA	314	
Preston Porphyry Hill	Deloro	1913-15	46	312	6.78
St. Andrew Goldfields – Stock	Stock	1989-94, 2000	815 429	129 856	0.16
Tonaga/Smith Thorne	Horwood	1938-39	6 653	2 299	0.35
Tisdale Ankerite	Tisdale	1952	14 655	2 236	0.15
Tommy Burns/ Arcadia	Shaw	1917	21	14	0.28
Vipond	Tisdale	1911-41	1 565 218	414 367	0.26
[1]*Grade: ounce gold per ton*	**Total**		**331 190 371**	**66 616 722**	**0.201**

Table 4. Gold production from the Wawa area to the end of 2004.

Mine Name	Township	In Production	Tons Milled	Oz. Au	Grade (ounce/ton)
Alden-Goudreau	Cowie	1937, 40, 43, 45	13 479	3220	0.24
Centennial	Naveau	1939-40	8612	610	0.07
Cline	Jacobson	1938-40, 1947-48	331 842	63 328	0.19
Darwin/Grace	McMurray	1902-03, 07-08, 10, 23, 25, 30, 35, 37, 40, 43-44	45 528	15 191	0.33
Deep Lake	McMurray	1936-1938, 1943	2790	1633	0.59
Eagle River	Point Isacor	1995-2004	2 095 987	583 202	0.28
Edwards	Jacobson	1938	1537	485	0.32
		1997-2002	389 309	140 258	0.36
Holdsworth Prospect	Corbiere	1933	60	10	0.17
Kremzar	Finan	1988-90	392 858	37 678	0.10
Magino/Algoma Summit	Finan	1930-40, 1988-92	>768 679	113 228	0.15
Magnacon	Mishibishu Lake	1989-90	165 000	15 356	0.09
Minto (includes Jubilee and Cooper)	McMurray	1929-1942	184 600	37 678	0.20
Mishi	Mishibishu Lake	2002- 2004	96 600	10 923	0.14
Murphy/Algold /Amherst	Abotossaway	1926-32, 36-38, 1940	23 211	2450	0.10
Norwalk/Manxman	Naveau	1904, 1910	820	60	0.07
Parkhill	McMurray	1902, 29, 30-38, 40-44	125 778	54 301	0.43
Ranson	Rabazo	1939	774	156	0.20
Renabie	Leeson	1947-70, 1981-91	5 583 895	1 100 000	0.20
Smith/Van Sickle	McMurray	1935-36	9228	536	0.06
Stanley	McMurray	1936	1963	84	0.04
Surluga	McMurray	1968-69, 1988-89	87 460	8898	0.10
Total			**10 330 010**	**2 189 285**	**0.212**

Table 5. Base metal production in the Timmins District to the end of 2004.

Mine Name	Township	In Production	Ore Milled	Grades
Alexo	Dundonald	1912-19	51 857 tons	4.5% Ni, 0.55% Cu
		1943-44	4 923 tons	
Alexo / Kelex	Dundonald, Clergue	2004	17 398 tonnes	2.3% Ni, 0.23% Cu, 0.07% Co
Canadian Jamieson	Godfrey	1966-71	816 173 tons	2.44% Cu, 4.22% Zn
Jameland	Jamieson	1969-72	509 356 tons	0.99% Cu, 0.88% Zn
Kam Kotia	Robb	1943-44	6.6 Mtons	1.1% Cu, 1.17% Zn, 0.10 oz/t Ag
		1961-72		
Kidd Creek	Kidd	1966-present	140 382 M tonnes	2.39% Cu, 6.49% Zn, 0.262% Pb, 82 g/t Ag
Langmuir #1	Langmuir	1990-91	111 502 tons	1.74% Ni
Langmuir #2	Langmuir	1972-78	1.1 Mtons	1.43% Ni
McIntyre	Tisdale	1963-82	10 Mtons	0.67% Cu
Redstone	Eldorado	1989-92	294 895 tons	2.4% Ni
		1995-96	10 228 tons	1.7% Ni
United Obalski	Godfrey	1966	Produced 240 tons Cu concentrate	

De Beers Canada Inc. – Victor Project

At the Victor Project, located 90 km west of Attawapiskat in the James Bay Lowlands, De Beers Canada Inc. continued mine permitting of the site in preparation for construction and development of Ontario's first diamond mine. At the same time, Impact Benefit Agreements with the Attawapiskat First Nation are being negotiated and participation agreements covering employment, business and educational opportunities are being pursued with other affected communities. The projected cost of the planned open-pit mine operation is $860 million. De Beers submitted a Comprehensive Study Environmental Assessment (EA) to government authorities for review. Natural Resources Canada is the lead government branch for the EA process. Numerous public consultation planning meetings were held throughout the year.

The Victor Project has a reserve of 28.7 million tonnes of kimberlite containing 6 million carats of diamonds. The grade is 22.3 carats per hundred tonnes (0.223 carats per tonne). Revenue per tonne of ore is projected to be $117 (Canadian dollars). To date, De Beers has invested $97 million in the Victor Project.

Patricia Mining Corp. and Richmont Mines Inc. – Island Gold Project

Patricia Mining Corp. conducted a $2.5 million underground assessment program at the Island Gold Project located in Finan Township. The program consisted of dewatering of the Lochalsh Ramp, underground diamond drilling and other lateral and vertical underground development. The objective of the underground program was to define a mineable resource at the Island-Lochalsh Zone that will enable a decision to be made on recommencing production at the existing mill. Funding for the project was provided by Richmont Mines Inc. Underground drifting on the 125 m level was extended for an additional 125 m, while drifting on the 140 m level extended the East and West sill drifts for 37 m and 16 m, respectively.

The underground drilling program consisted of the following components: 1) definition drilling of 12 flat holes carried out from the 125-level and the Lochalsh ramp to guide the advancement of the 140-metre drift; 2) definition drilling of 44 ring holes from 8 drill bays spaced at 40 m intervals; and 3) exploration drilling (4 holes, 1200 m) to test the Shore Zone at 50 m and 100 m intervals (Patricia Mining Corp., press release, July 19, 2004). Results from the drilling showed good vertical and horizontal continuity of the C and D Zones. Both the C/D and the E1/E2 gold-bearing zones continue to be open at depth with Zone E showing enrichment in grade and thickness to the east (Patricia Mining Corp., press release, October 1, 2004).

In mid-October, Patricia and Richmont commenced an interim underground drilling program comprising 4500 m of drilling that was completed in mid-January 2005. This program will verify the extension of the Island deposit

between the depths of 330 and 430 m and laterally over 200 m (Richmont Mines Inc. and Patricia Mining Corp., press release, December 3, 2004).

At the end of November, Patricia and Richmont released an updated mineral resource estimate on the Island Deposit. Roscoe Postle Associates Inc. calculated a NI43-101 compliant mineral resource that outlined an indicated resource of 272 000 tonnes averaging an uncut grade of 13.8 g/t gold. Using a cutting factor of 75 g/t gold for high assays, the average grade is 12.3 g/t gold and 108 000 contained ounces of gold. An update to the mineral resource was announced at the end of January 2005. The update was based on results obtained from the November-December 2004 interim diamond drilling program. Table 6 provides details of the resource calculation.

Table 6. Island Gold Deposit Mineral Resource Estimate – January 2005.

Classification	Zone	Horizontal Thickness (m)	Tonnes	g/t gold uncut	g/t gold cut*	Contained ounces
Total Indicated	C	3.4	118,000	10.7	10.0	38,000
Total Indicated	D	2.2	57,000	18.1	14.2	26,000
Total Indicated	D1	2.1	13,000	12.9	11.5	5,000
Total Indicated	E	1.6	76,000	15.9	14.6	36,000
Total Indicated	E1	2.4	8,000	12.6	12.1	3,000
Island Zone Indicated		2.6	272,000	13.8	12.3	108,000
Total Inferred	C	1.6	61,000	16.2	15.2	30,000
Total Inferred	D	1.4	37,000	21.0	16.3	20,000
Total Inferred	D1	1.4	18,000	21.7	17.0	10,000
Total Inferred	E	1.5	65,000	31.7	11.3	23,000
Total Inferred	E1	2.1	152,000	13.7	11.4	55,000
Island Zone Inferred		1.8	333,000	18.9	12.9	138,000

** High assays cut to 75 g/t gold*

† Information derived from Patricia Mining Corp., press release, February 2, 2005

As a result of the positive resource estimate, Richmont Mines Inc. has exercised its option to acquire a 55% interest in the property. As of January 1, 2005, Richmont will become the operator of the property.

River Gold Mines Ltd. – Mishi-Magnacon Complex

River Gold Mines Ltd. commenced an underground exploration and development program at the past-producing Magnacon Mine late in 2003. The $6.8 million program consisted of 1825 m of development work, 15 000 m of diamond drilling and approximately 30 000 m of test mining. A portion of the exploration costs ($1.7 million) was to be contributed by Windarra Minerals Ltd. and Westward Explorations Ltd., who together hold a 25% interest in the Magnacon property. The purpose of the program was to identify ore reserves that could be rapidly developed and exploited while providing a platform for on-going exploration.

Drilling tested two mineralized structures consisting of east-striking, northward-dipping, quartz vein systems hosted within the Mishibishu Lake Deformation Zone. This structure hosts the Main Zone of the Magnacon Mine. Results of the drilling show potential in the Main Zone between depths of 200 and 300 m and between sections 5500E and 5600E. Significant results from this drilling include separate intervals of 13.65 g/t gold over 2.1 m, 11.84 g/t gold over 1.57 m, 8.04 g/t gold over 1.6 m and 2.54 g/t gold over 6 m (Windarra Minerals Ltd. and Westward Explorations Ltd., press release, June 24, 2004).

In early September, River Gold announced plans to scale back on the underground exploration program. The underground workings will remain dewatered and the company will continue to conduct underground delineation drilling of the Mishi F and G Zones. Plans for the development of a fifth level exploration drift and test stoping have been postponed (River Gold Mines Ltd., press release, September 10, 2004).

St. Andrew Goldfields Ltd. – Clavos Gold Project

St. Andrew Goldfields Ltd. owns the Stock Mine located in Stock Township and the Clavos gold property in Stock and German townships. St. Andrew continued an advanced exploration program on the Clavos gold deposit that included surface excavation to bedrock and driving of a ramp at a 16% slope to access gold mineralization at a vertical depth of 250 m. By year end, the 1500 m long ramp had reached the 250 m level objective. Underground diamond drilling on the Clavos amounted to 8784 m, and 4300 m of surface exploration diamond drilling was also completed.

St. Andrew Goldfields Ltd. – Stock Mine

At the Stock Mine, the 1000 tonne per day gold mill was refurbished and returned to production. A small amount of gold ore from the upper levels of the Stock Mine, as well as development muck from the Clavos project, was processed through the Stock Mill. A 100 m of underground ramp development was completed at the Stock Mine. Surface diamond drilling amounted to 995 m and underground diamond drilling totalled 5000 m. Dumas Mining Contracting Ltd. is the on-site contractor for the underground development operations.

EXPLORATION ACTIVITY

Argent Resources Ltd. – Timmins Offsets Gold Project

Argent Resources Ltd. completed 3972 m of diamond drilling in 13 holes on the Timmins Offsets gold project in Tully Township. Drilling tested the geometry and controls of gold mineralization previously delineated on the property. This showed the delineated zones continue to depth and remain open down plunge. All holes drilled (except for the deepening of 2 previously drilled holes) intersected quartz-carbonate veins in zones varying from a few meters to more than 30 m (core length, true width varies). Argent interprets the mineralization to consist of 3 sub-vertical zones that occur along a strike length in excess of 300 m and traced from surface to between 150 m and 300 m along a 45° to 65° easterly plunge. The zones are controlled by fault structures. Assays returned up to 76.83 g/t gold over 3.4 m (fire assay, 73.94 g/t gold total metallics). The gold mineralization was determined to be predominantly coarse-grained (Argent Resources Ltd., press release, June 22, 2004).

Arctic Star Diamond Corp. and Oasis Diamond Exploration Inc. – Enigma Property

At their Menzies Township property, Oasis Diamond Corporation and joint venture partner Arctic Star Diamond Corp. completed a 5 hole (500 m) diamond drilling program and collected three, 800 kg bulk samples from three sites. No diamond results were available at the time of writing. A program of stripping and detailed mapping accompanied the bulk sampling program (Oasis Diamond Exploration Inc., press releases, May 26 and September 1, 2004).

Early in the year, Oasis released partial diamond results from their 2003 exploration program on the Dogma occurrence. Of the 6 samples analysed from drill hole #16, 4 returned a single micro diamond from samples weighing between 9.97 and 16.79 kg. Oasis also reported the recovery of a broken macro diamond from drill hole #14. The diamond measured 760 by 460 by 141 microns (Oasis Diamond Exploration Inc., press releases, January 22 and February 26, 2004).

Arctic Star Diamond Corp., Kel-Ex Development Ltd. and Metalex Ventures Ltd. – Kyle Project

A 44 claim group (30 km^2) was staked in the Kyle Lake area by the joint venture partners in mid-2004. The property encompasses 34 circular magnetic anomalies. By year's end, 6 anomalies were tested by 8 diamond-drill holes (totalling 683 m). Possible kimberlite was intersected in one drill hole at 76 m and continued to the bottom of the

hole at a depth of 147 m. A second possible kimberlite was intersected in a drill hole 260 m north of the first drill hole. It is uncertain whether the two intersections represent two separate occurrences or are part of the same body. A 105 kg sample of core from the first kimberlite and a 144 kg sample of the second are being processed for diamonds, diamond indicator minerals and kimberlite indicator minerals (Metalex Ventures Ltd., press release, October 25, 2004; P. Gregory, Kel-Ex Development Ltd., written communication, 2005).

Band-Ore Resources Ltd. – Corbiere Property

Band-Ore Resources Ltd. completed a 6 hole (1792 m) initial diamond drilling program on their Corbiere Township gold property. The program was designed to follow up on 3 new gold occurrences discovered in 2003. All gold occurrences were found within or marginal to a feldspar porphyry intrusive, which lies within the Key Lake Shear Zone. Channel samples collected by Hemlo Gold Mines Inc. in 1992 in the same area of this drill program returned assays of 0.91 g/t gold over 7.0 m or an average of 0.87 g/t gold over 19.0 m (Bird 1993). The most significant gold mineralization from the 2004 program was intersected in hole CB-04-3, which returned an average grade of 3.7 g/t gold over 4.5 m located within a broader zone averaging 2.6 g/t gold over 6.6 m (Band-Ore Resources Ltd., press release, October 28, 2004).

Band-Ore Resources Ltd. – GQ Diamond Property

Band-Ore Resources Ltd. announced the results of the 2003 bulk sampling program on the GQ diamond property near Wawa. A total of 3 bulk samples were collected including 2 samples from the Engagement Zone and a third sample from Area SEF. De Beers Canada Inc. completed Dense Media Separation processing and diamond extraction. The diamond results from this bulk sampling program are outlined in Table 7.

Table 7. 2003 bulk sample results from the GQ Property[†].

Occurrence	Sample Weight (tonnes)	Sieve +1 mm	Sieve +2 mm	Sieve +3 mm	Sieve +5 mm	Sieve +6 mm	Total Diamonds	Total Carat Weight
Engagement Zone East	22.1	1	4	4	2	1	12	0.375
Engagement Zone West	20.4	2	3	3	0	0	8	0.155
Area SEF	11.7	0	1	0	0	0	1	0.015

† Information derived from Band-Ore Resources Ltd., press release, April 1, 2004

Band-Ore also completed a prospecting program along a newly constructed logging road crossing the south-central part of the property. A total of 7 additional areas of potentially diamondiferous heterolithic breccia were discovered. Exploration activity on these zones was restricted to mechanical stripping (Cavey 2004a).

Band-Ore Resources Ltd. – Rock Star Property

Band-Ore Resources Ltd. commenced exploration activities on a new gold discovery in the Goudreau-Lochalsh area in the summer of 2004. The Rock Star Property is located in Jacobson and Riggs townships and was discovered by local prospectors M.A. Tremblay and J. Robert.

The east-southeast-trending auriferous vein system is hosted by carbonate-altered mafic metavolcanic rocks and has been mechanically stripped over a strike length of approximately 80 m. Surface widths of the system range from 0.3 to 1.5 m. Grab samples from the quartz vein returned assays from 1.4 g/t gold to 61.7 g/t gold. Assays from grab samples from the wall rocks range from 0.44 g/t gold to 0.795 g/t gold. Results from the diamond drilling program also were encouraging with assay values as high as 10.02 g/t gold over 0.8 m including 38.3 g/t gold over 0.1 m (Band-Ore Resources Ltd., press releases, August 24, and September 21, 2004).

Band-Ore Resources Ltd. – Thorne Property

At their Thorneloe Township property, Band-Ore Resources Ltd. completed a 45 hole (9730 m) diamond drilling program. The program was designed to test geophysical and geological targets not associated with the Golden River gold zones (East and West) and other targets not previously tested.

The most significant outcome of the drilling program was the discovery of a new gold-bearing zone on the property. The Sand Hill Porphyry Zone is located within the Golden River Deformation Zone, approximately 100 to 150 m south of the Golden River West Zone. The porphyry is variably silicified, sericite and carbonate altered and mineralized with 3-5% pyrite. Minor amounts of pyrrhotite and sphalerite were also observed. The porphyry intrudes a sequence of carbonatized, fine-grained metasedimentary rocks. Gold mineralization occurs within the porphyry, altered sediments and near the contacts. The porphyry has been traced for approximately 500 m along strike and remains open at depth. Significant assays from the zone include values up to 3.4 g/t gold over 9.8 m, including 4.61 g/t gold over a core length of 6.6 m from drill hole GW-04-11 (Band-Ore Resources Ltd., press release, June 17, 2004). Exploration on this zone included the deepening of 22 holes (3220.5 m drilled in 2004) drilled in the area of the discovery between 1996 and 1997 and the completion of 10 new diamond drill holes (2789 m) (Cavey 2004b).

Other zones tested during 2004 include the Red Porphyry Zone (3 holes, 831 m) and the Thibault Horizon (1 hole). Significant results from the Red Porphyry Zone include 1.35 g/t gold over 7.5 m, including an interval of 5.30 g/t gold over 1.5 m from drill hole GW-04-3. The best intersection from the Thibault Horizon returned 0.20 g/t gold over 0.7 m (Cavey 2004b).

Corona Gold Corporation and Harte Gold Corp. – Sugar Zone

Between November 2003 and March 2004, Corona Gold Corporation and Harte Gold Corp. completed a 26 hole, (7100 m) diamond drilling program on the Sugar Zone Property in the Dayohessarah Lake greenstone belt. The property is located 80 km north of Wawa. In the fall of the year, a second-phase diamond drilling program consisting of 11 drill holes (1100 m) was also completed.

The 2003-04 drill program was successful in expanding the strike and dip extent of the Sugar Zone and increasing the level of confidence in the continuity of mineralization between drill holes. Corona calculated an updated inferred resource estimate for the deposit, which now stands at 886 100 tonnes at a grade of 9.729 g/t gold (8 676 400 contained grams). This resource estimate is based on a cut-off grade of 3.0 g/t gold over a minimum true width of 1.45 m. The new resource represents an 83% increase from the previous estimate (Corona Gold Corp. and Harte Gold Corp., press release, May 4, 2004).

The follow-up diamond drilling program was designed to improve the economics of the Sugar Zone deposit by increasing the tons per vertical foot to a depth of 300 m. The program did not successfully meet the objectives of the plan although 2 deep holes (DH-81 and CH-89) drilled at the north end of the deposit indicate that the mineralization continues in that direction. A deep hole drilled in the central part of the deposit (CH-90) intersected mineralization at a depth of 570 m, suggesting that the deposit remains open to depth (Corona Gold Corporation and Harte Gold Corp., press release, December 9, 2004).

Dianor Resources Inc. and 31814793 Canada Ltd. – Leadbetter Property

Late in 2004, Dianor Resources Inc. announced the option of the Leadbetter Property in Chabanel Township, north of Wawa. Due diligence sampling by an independent third party confirmed the presence of diamond-bearing bedrock over a distance of 505 m. Additional bedrock sampling recovered 53 diamonds from five bedrock sample locations (Dianor Resources Inc., press release, January 11, 2005).

Prior to acquisition by Dianor, the property vendors completed an exploration program of ground geophysical surveying, mapping, trenching, stripping, sampling and diamond drilling (4 drill holes, 294 m).

Results of the diamond analysis completed by SGS Lakefield Research Ltd. for the independent third party are listed in Table 8.

Table 8. Independent Third Party Diamond Results – Leadbetter Property†.

		Diamond Size (mm)								
Sample	**Weight (kg)**	**+0.105**	**+0.150**	**+0.212**	**+0.300**	**+0.425**	**+0.600**	**+0.85**	**+1.18**	**Total**
#1 (Pit #4)	24.9	0	0	1	3	0	1	0	0	5
#2 (Pit #7)	27.9	0	0	4	1	1	0	0	0	6
#3 (Pit #5)	24.9	0	0	2	8	2	3	0	0	15
#4 (Pit #6)	31.8	0	0	2	3	4	3	0	0	12
#5 (DDH-1 collar)	20.9	0	0	2	7	6	0	0	0	15
Total	130.4	0	0	11	22	13	7	0	0	53

† *Information derived from Dianor Resources Inc., press release, January 11, 2005*

First Nickel Inc. – Dundonald Property

First Nickel Inc. completed 76 diamond drill holes totalling 13 498 m on the Dundonald property in Dundonald Township, where they are acquiring a 100% interest in 56 mining claims from Falconbridge Limited. The property consists of 56 contiguous claim units comprising 946 hectares, located 60 km northeast of Timmins. Most of the drilling probed the Dundonald South Zone where 63 holes (11 433 m) targeted nickel-bearing sulphide mineralization. The remainder of the drilling tested the Terminus Zone and the western Kelex stratigraphy. Thirty-seven drill holes were tested with down-hole pulse electromagnetic surveys. As a result of the diamond drilling, First Nickel has identified 8 individual lenses of nickel mineralization at Dundonald South Zone. One of the highest assays from drill core included 12.07% Ni and 17.55 g/t of combined Au, Pt and Pd over a 1.7 m interval (K. Montgomery, written communication, February 3, 2005).

Glencairn Gold Corporation – Vogel Property

Glencairn Gold Corporation completed a 10 000 m diamond drilling program on the Vogel property in the first half of 2004. The Vogel property is located between the Hoyle Pond Mine and the past-producing Bell Creek Mine in Hoyle Township. Gold mineralization on the Vogel property appears to be on strike with and on the same gold-bearing structure mined at the neighbouring mines. Diamond drilling to date consists of 159 holes totalling approximately 54 100 m. Mineralization occurs in 6 primary zones comprised of quartz and quartz-carbonate veinlets and veins, with associated sulphide mineralization. The mineralization is localized in wider, steeply dipping envelopes of carbonate-silica alteration (grey zone) hosted by mafic metavolcanic rocks (http://www.glencairngold.com/s/Vogel.asp).

Globex Mining Enterprises Inc. – Deloro Township Property

Globex Mining Enterprises Inc. completed mineralogical test work on samples from 4 cross-sectional drill holes on the company's magnesium-talc project in southern Deloro Township. The company contracted SGS – Lakefield Research Limited to complete analysis utilizing the QemSCAN technique on 100 samples of split NQ core representing a linear 247.7 m core length cross-section. The objective was quantitative determination of the sample mineral assemblage, with emphasis on magnesite content and magnesium deportment.

Based upon the QemSCAN analysis the mean mineral assemblage of the magnesite-talc ore body in the area tested is as follows: magnesite 52.8%, calcite 0.1%, talc 28.1%, other 0.1%, quartz 8.7%, Mg-silicates 0.0%, oxides (Fe/Ti/Cr) (combined) 3.6%, ankerite 0.0%, chlorite 3.2%, sulphides 0.0%, dolomite 2.1%, feldspars 0.0%, serpentine 1.3%. The magnesium content (calculated) reports 69.4% wt.% to the magnesite, 24.2 wt.% to the talc, 3.6 wt.% to chlorite, 1.4 wt.% to serpentine and 1.3 wt.% to dolomite. Previous test work has shown that the talc has a brightness of 89, no associated asbestos fibers and is a marketable by-product (Globex Mining Enterprises Inc., press release, April 30, 2004).

Gowest Amalgamated Resources Ltd. – Frankfield Zone

Gowest Amalgamated Resources Ltd. completed 23 diamond drill holes totalling 6151 m on the Gowest-New Texmont (50-50) joint venture property in Tully Township. The 600 m long Frankfield Zone strikes east and dips 70° north. The 23 holes intersected the zone at 50 m intervals, horizontally and vertically, between a depth of 100 and 250 m. The last two holes intersected the target at about 300 m.

A suite of dominantly felsic to intermediate metavolcanic tuffs host the main gold zone, 20 m north of a contact with ultramafic volcanic rocks. One, sometimes two subsidiary zone(s) occur above the main zone. The gold zones are characterized by extreme deformation, including shearing and brecciation. Quartz-carbonate flooding and associated pyrite, arsenopyrite and hematite mineralization are characteristic features. Sulphides and graphite make the main gold zone conductive.

Eleven of the 23 holes that intersected the main zone averaged 7.07 g/t (0.24 ounces per ton) gold over an average true width of 3.62 m (11.87 feet) using a value-width cut-off of 3 g/t gold and 2.6 m width. Similarly, 12 of 23 holes intersected one, sometimes two, subsidiary zone(s). These intersections averaged 3.63 g/t gold (0.10 ounces per ton) over a true width of 2.86 m (9.8 feet) using a cut-off of 3 g/t gold and 3 m width. Gowest reported that, for the most part, the potentially economic mineralization is confined to continuous zones (Gowest Amalgamated Resources Ltd., press release, October 13, 2004).

Greenshield Resources Ltd. – Newton Township Property

Greenshield Resources Ltd. completed a 34 hole (6861 m) diamond drilling program on the A Zone occurrence on their Newton Township property. Drill hole 16 returned an assay of 4.24 g/t gold over 3.05 m including a section returning 5.82 g/t gold over 1.9 m. Drill hole 17 returned an assay of 4.36 g/t gold over 1.85 m including a section returning 8.17 g/t gold over 0.85 m (Greenshield Resources Ltd., press release, August 5, 2004). The A Zone lies within the northeast-trending Newton High Strain Zone. The altered basalt flows in this high strain zone typically display strong carbonate alteration and may also exhibit pervasive silicification (Gamble 2004).

Holmer Gold Mines Limited – Murphy Gold Project

Holmer Gold Mines Limited completed a 15 hole (2540 m) diamond drilling program on the Murphy gold mine property during the winter of 2003-04. The program was designed to delineate a gold-bearing quartz vein system in an area to the west of the main shaft, where an extensive exploration program completed by Prime Explorations Limited and Orequest Consultants in 1988 defined a second parallel vein structure striking to the northwest. The drilling program successfully confirmed the presence of high gold values and the existence of the secondary vein structure. The total inferred resources on the Main Vein is currently estimated at 108 092 tons grading 0.39 ounce per ton gold using a cut-off grade of 0.10 ounce per ton gold (Holmer Gold Mines Limited, press release, April 21, 2004).

Inco Technical Services Limited – Timmins Properties

Inco Limited acquired a number of properties by staking following the release of Discover Abitibi Initiative airborne geophysical and bedrock geology surveys north of Timmins. These were in Hoyle, Evelyn, Hanson, Kearney, Klock and Bergman townships. Inco completed 16.1 km of ground magnetic surveys and 14.8 km of IP/RS surveys on the properties. On the Hoyle Township claims, 4 diamond drill holes totaling 883 m tested geophysical targets (D. Earl, Inco Technical Services Limited, written communication, 2005).

JML Resources Ltd. – Horwood Lake Property

In mid-2004, JML Resources Ltd. entered into two separate option agreements to earn a 100% interest in the Horwood Lake property in Horwood Township. The property geology is summarized as the G. Ross property (Atkinson et al. 2002) and the G. Windsor and F. Ross property (Atkinson et al. 2000). In 2004, JML Resources

completed ground magnetic and IP surveys over the property and sampled several new gold occurrences. Grab samples returned values up to 40.45 g/t gold. Zone 1 is approximately 1.1 km long and exhibits widespread gold mineralization associated with a strongly altered, siliceous porphyry. Grab sample results range from 2.61 g/t gold to 39.47 g/t gold (JML Resources Ltd., press releases, November 25 and December 20, 2004).

The Horwood Lake property includes several historic gold properties including the Stack Vein and the Lefever-Silams occurrence. Diamond drilling in the 1980s by Pelangio-Larder Mines on the Stack Vein intersected 12 auriferous zones with a minimum thickness of 1.5 m with an average grade of 19 g/t gold over 0.3 m. Samples from massive sulphide pods in quartz veins at the Lefever-Silams occurrence returned assays up to 25 g/t gold, 4.5 g/t silver and 0.3% Cu. Grab samples collected in 2004 returned assays of 2.26 g/t gold and 7.20% Cu (JML Resources Ltd., press release, November 25, 2004).

Kel-Ex Development Ltd. – Attawapiskat Project

Kel-Ex Development Ltd. is the operator of the Attawapiskat Project that includes Metalex Ventures Ltd. (50-60%), Arctic Star Diamond Corp. (20%), Big Red Diamond Corporation (20%) and Oasis Diamond Exploration Inc. (0-10%). Work completed on the Attawapiskat Project included 324 proven source drill holes amounting to 5358 m. 1H 1183 proven source samples collected. 940 were analyzed for kimberlite indicator minerals and 144 samples were analyzed for diamonds. Diamond drilling included 67 holes with a total length of 4450 m. Line cutting and ground geophysics amounted to 43 line km. Magnetic, electromagnetic and induced polarity data were collected. Helicopter-borne geophysics consisted of 6000 line km of airborne magnetic and electromagnetic surveys (P. Dingwall, Kel-Ex Development Ltd., written communication, 2005).

Lake Shore Gold Corp. – Thunder Creek Property

Lake Shore Gold Corp. optioned the Thunder Creek Property from Rand Ore Resources Ltd. late in 2003. The Thunder Creek Property is adjacent to Lake Shore's Timmins Gold Property and hosts the potential on-strike extension westward of the Ultramafic and Footwall Zones (Lake Shore Gold Corp., press release, November 12, 2004). Exploration on the property included a summer program of mapping, trenching, sampling and a soil geochemical survey. Anomalous gold values up to 5.0 g/t gold were returned from the surface sampling and mineralized float samples returned values up to 73.0 g/t gold (Lake Shore Gold Corp., press release, August 25, 2004). A first-phase diamond drilling program (7 holes, 1945 m) was completed in January. Significant assays included 3.7 g/t gold over 3.9 m, including 9.0 g/t gold over 0.8 m from drill hole TC03-06. These results indicate strong alteration and mineralization associated with a favourable host rock along a minimum strike length of 300 m (Lake Shore Gold Corp., press release, March 24, 2004). A second-phase, 3000 m drill program commenced in late summer 2004. For the year, Lake Shore Gold drilled 12 holes totaling 4100 m. The company has completed 19 drill holes amounting to 6040 m on the Thunder Creek property. Lake Shore also drilled 1 diamond drill hole of 329 m in Ogden Township (M. Byron, Lake Shore Gold Corp. written communication, 2005).

Lake Shore Gold Corp. – Timmins Gold Project

Lake Shore Gold Corp. continued resource expansion diamond drilling at their Bristol Township gold property, formerly the Holmer Shaft property. The 2004 drill program totalled 31 548 m including 25 864 m of resource expansion drilling, 4350 m of resource definition drilling on the upper 100 m of the deposit and 3100 m of exploration drilling (Lake Shore Gold Corp., press release, September 16, 2004). More than 14 000 m in 44 holes were drilled in 2004.

In early September, Lake Shore released an updated resource calculation on the deposit. The results are indicated in Table 9. The resource estimate is a 400% increase over the 2003 inferred resource and a 140% increase over the 2004 pit resource estimate.

Table 9: 2004 Modified Resource Estimate†, Timmins Gold Project

Category	Tonnes	Cut Grade Gold (g/t)	Uncut Grade Gold (g/t)	Contained Ounces Cut	Contained Ounces Uncut
Indicated	1 369 000	10.96	16.45	482 000	724 000
Inferred	200 000	8.70	12.43	56 000	80 000
Additional Inferred**	1 000 000	4.07	4.07	131 000	131 000

** based on a 6 g/t gold minimum cutoff and 30 g/t gold cap, except the Footwall Zone that was cut to 30 g/t gold*
*** Additional Inferred Resources grading 3-6 g/t gold*
† Information derived from Lake Shore Gold Corp., press release, September 10, 2004

By the end of the year, Lake Shore had acquired 100% of the Timmins Gold Project. A baseline environmental study is underway (Lake Shore Gold Corp., press release, September 10, 2004). Exploration drilling on the Timmins Gold Project included 687 m in 3 holes.

Leeward Capital Corp.

Leeward Capital Corp. completed a ground gravity survey over 96.8 line km on 31 claims in the Attawapiskat area. A follow-up power auger sampling program tested 8 anomalies identified by the gravity survey (J. Davis, Leeward Capital Corp., written communication, 2005).

Liberty Minerals Exploration Inc. – McWatters Deposit

Liberty Minerals Exploration Inc. completed diamond drilling, magnetometer and Pulse EM (PEM) surveys on the McWatters Property, Limerick Township. The McWatters property hosts a historic (1964) nickel deposit with mineral resources of approximately 400 000 tons grading 1.25% Ni that are not NI 43-101 compliant. Liberty commenced diamond drilling on the property in October 2003 to re-establish the resource and, if possible, locate new resources. The drilling concluded in April 2004. The drilling re-defined the mineralization and increased the strike length and margins of the deposit. A significant zone of high-grade nickel mineralization was located at the base of the deposit. Liberty described the McWatters Deposit as a triangular zone, 150 m long, 25 m wide and 120 m deep. From an economic standpoint, Liberty stated that the McWatters deposit appears to be small for a stand-alone mine - mill scenario, but could augment existing mill operations in the region. The company announced a 2000 m follow-up diamond drilling program on October 5, 2004. Ground magnetometer and Pulse-Electromagnetic surveying outlined numerous conductors along favourable geological horizons (Liberty Minerals Exploration Inc., press releases, October 5, June 21, April 16, March 24, February 5 and 12, January 15, 2004).

MacDonald Mines Exploration Ltd. – Big Mac Property

MacDonald Mines Exploration Ltd. hold several large claim blocks in the McFaulds Lake area: the Big Mac and the McNugget properties. The Big Mac property is within the Timmins Resident Geologist District while the McNugget is in the Thunder Bay North Resident Geologist District and is reported upon by Smyk et al. (2005). MacDonald completed a helicopter-borne VTEM survey early in the year that yielded many "drill-ready" targets. Three of these were tested prior to break-up in the spring of 2004. Geochemically elevated zinc and copper assays were reported from narrow intersections of sulphide mineralization in 5 of the diamond drill holes. Ground geophysical surveys were completed in September prior to a second phase of diamond drilling that consisted of 8 holes that intersected magnetic sulphides in 6. Metal values from the Cantinkeyuen - Hole BM-4 intersected a magnetic, pyrrhotite and pyrite rich (with occasional sphalerite veins) massive sulphide unit that returned 0.45% Zn over 10.4 m. Hole BM-8A, drilled near parallel to strike, intersected graphitic magnetic to semi-magnetic and talc-chlorite altered mafic and mafic-ultramafic amphibolites. A section of pyrrhotite to magnetite metasiltite returned 22 ppb Au, 202 ppb Bi and 111 ppb Pd over 0.70 m. Hole BM-9B, drilled perpendicular to strike, intersected several 1-4 m thick intervals of massive magnetite over 30 m that yielded maximum values up to 1.0% Cu and Y values up to 0.15% (MacDonald Mines Exploration Ltd., press releases, January 19, March 2, April 12, June 22, July 29, September 9, October 28, December 1, 2004 and January 19, 2005).

Northern Shield Resources Inc. – Highbank Lake Property

Northern Shield Resources Inc. completed a MMI (mobile metal ion) soil sampling survey on the Highbank Lake property. Three anomalies were identified. HB1 is a 22 km long Ni-PGM anomaly interpreted to be caused by a reef-like deposit within the layered Highbank Lake mafic-ultramafic intrusion. The Lower Zone is a Ni-PGM anomaly 800 m below the HB1 anomaly. A third, broad geochemical anomaly, the Contact Zone, is present at the basal contact of the intrusion. Northern Shield completed an IP survey on their property prior to commencing diamond drilling late in the year. Diamond drilling intersected dominantly medium- to coarse-grained gabbro with local very coarse-grained textures and cumulate layering. Coarse-grained to pegmatitic anorthosite and pyroxenite were also encountered. Trace amounts of sulphides including pyrite, pyrrhotite and chalcopyrite are reported to be sparsely disseminated throughout the core (Northern Shield Resources Inc., press releases, March 24, August 18, September 21, September 29 and December 17, 2004).

Osprey Gold Inc – Jerome Mine

Osprey Gold Inc. acquired and explored the Jerome Mine in Osway Township. A summer diamond drilling program amounted to [illegible] feet in [illegible] holes to test the Main N Zone at the mine site between the 100 to 700 foot level. A NI 43-101 ore reserve of [illegible] tons grading 0.203 ounce gold per ton was outlined on the property to a depth of [illegible] feet (Osprey Gold Inc., 2004).

Patricia Mining Corp. – Three Brothers Creek Property

In September 2004, Patricia Mining Corp. acquired 156 claim units in Riggs and Bruyere townships, located 20 km east of [illegible] Gold Project. Previously excavated bedrock trenches were backfilled while 7 new areas were stripped to expose several gold bearing trenches. Eight diamond drill holes totaling 524 m tested gold targets in Riggs Township. One drill intersection averaged 12.40 g/t gold over 0.57 m from the Sunday Vein (Patricia Mining Corp., written communication, 2005).

Patricia Mining Corp. and Richmont Mines Inc. – Island Gold Project

The Island Gold project is located 50 km northeast of Wawa and includes 120 patented and leased claims and 48 staked claims. The project is a joint venture between Richmont Mines Inc. (55%) and Patricia Mining Corp. (45%). In conjunction with their underground exploration program, Patricia Mining Corp. completed a 9 hole (3600 m) surface drilling program at the Island Gold Project. Two deep holes were completed on the North Shear Zone and Shore Zone and 7 drill holes investigated deep extensions of the Island-Lochalsh Zone at depths greater than 500 m. A significant result of the drilling program was the extension of the Island-Lochalsh Zone to a vertical depth of 580 m over a strike length of 150 m. The presence of gold mineralization was also confirmed in the North Shear Zone over a strike length of 1100 m and to a depth of 350 m.

Highlights from the drilling include hole PR-04-04, which intersected 4 m grading 7.07 g/t gold including 1 m that graded 15.50 g/t gold from the Island-Lochalsh Zone. Drill hole PR-04-07 intersected 3.5 m grading 15.10 g/t gold including a 1 m section that graded 44.5 g/t gold from the North Shear Zone (Patricia Mining Corp., press releases, May 5 and June 15, 2004).

Pelangio Mines Inc. – Detour Mine Property

In 2004, Pelangio Mines Inc. completed a surface diamond drilling program consisting of 19 drill holes (approximately 7000 m) designed to test potential new gold-bearing structures associated with geophysical anomalies, as well as to test already under-explored but known gold trends such as the main mine horizon at Detour Lake. Assays from holes drilled in a flexure in the cherty marker horizon (CMH), 1.8 km west of the mine, returned interesting results. Drill hole PMDDH-17 returned 1.337 g/t gold over 6.0 m (including 1 m of 2.73 g/t gold). Higher grade, narrow vein intersections also were encountered in hanging-wall metavolcanic rocks above the CMH.

Intersections from holes PMDDH 16 and 17 respectively assayed 6.14 g/t over 0.54 m and 9.04 g/t over 0.29 m (Pelangio Mines Inc., press release, May 31, 2004).

Diamond drilling of a moderate to strong IP and resistivity anomaly in an area approximately 2.5 km northwest of the Detour Mine shaft led to the discovery of a new zone, called the North Walter Lake Zone. Intersections from this target have returned numerous high-grade intersections including 9.568 g/t gold over 2.64 m (including 36.8 g/t gold over 0.64 m) from drill hole PM030, and 23.714 g/t gold over 1.2 m from drill hole PM040. To date, the North Walter Lake Zone has been drilled over a strike length of 900 m. This zone may represent an up-dip portion of a westerly plunging zone similar to the M Zone that lies 800 m to the south (Pelangio Mines Inc., press releases, October 18 and November 4, 2004).

At the end of November, Pelangio commenced a winter drilling program to evaluate various gold-bearing zones adjacent to the main mine area and to test geophysical and/or geological targets on the property. Specific targets included the North Walter Lake Zone and the Calcite Zone, which is a near-surface, relatively high-grade deposit containing a historical resource of 295 136 tonnes grading 7.3 g/t gold (Pelangio Mines Inc., press release, September 3, 2004).

Other aspects of the 2004 exploration program included a Mobile Metal Ion (MMI) geochemical survey and a concurrent scoping study of the remaining gold reserves at the Detour mine. Work on the mine property is conducted as a strategic alliance between Pelangio and High River Gold Mines Ltd. High River Gold provides technical expertise and operations management to Pelangio, and participates in the analysis, valuation and prioritization of the drilling targets.

Pelangio Mines Inc. and Trade Winds Ventures Inc. – Block A Property

In September 2003, Pelangio Mines Inc. optioned Block A of their Detour Lake Property to Trade Winds Ventures Inc. The Detour Lake Block A property comprises approximately 11.6 km^2 of the total 207 km^2 Pelangio land package at Detour Lake and is contiguous with the western boundary of the Detour Mine Property.

By the end of 2004, Trade Winds had completed over 17 000 m of diamond drilling. The focus of the 2004 drilling program was the definition and extension of the known areas of mineralization in the M Zone and the Northwest Zone structure. Two drills were used to test the M Zone structure along a 3.6 km strike length. One drill focused on in-fill drilling every 100 m from sections 14000E to 15000E. The second drill rig focused on the examination of a newly discovered zone of gold mineralization located along the M Zone structure. This new zone, called the Upper M Gold Zone is located up-dip of Placer Dome Canada Inc.'s original M Zone drilling. Significant assays from the Upper M Gold Zone include 6.64 g/t gold over 3.5 m in TWDDH-025 and 11.12 g/t gold over 3.2 m from drill hole TWDDH-005 (Pelangio Mines Inc. and Trade Winds Ventures Ltd., press releases, 2004).

Pele Mountain Resources Inc. – Attawapiskat River Diamond Project

On their James Bay Lowlands property, Pele Mountain Resources Inc. continued to test targets identified as a result of their 2003 ground geophysical surveys. Kimberlite indicator minerals were recovered from stream sediment samples collected in the vicinity of a number of prospective ground geophysical targets on their West River Property. Pele Mountain used a portable overburden drill to test a series of magnetic anomalies for the presence of kimberlite (Pele Mountain Resources Inc., press releases, January 5 and February 13, 2004).

Pele Mountain Resources Inc. – Festival Property

Early in the year, Pele Mountain Resources Inc. announced the results of the fall 2003 bulk sampling program on the Festival Property in Lalibert Township. The most significant result was the recovery of a 0.9 carat diamond from the Genesis occurrence. This diamond was recovered from the Genesis-2 bulk sample collected by De Beers Canada Inc. in 2003. De Beers collected 4 bulk samples from different diamond-bearing facies on the property in order to assess the diamond distribution relationship between micro diamonds and commercial-size diamonds. Each of the

bulk samples returned commercial-size diamonds greater than 1 mm² mesh sieve size. Table 10 summarizes the results of the 4 bulk samples collected by De Beers.

Table 10. Sample results from the Festival Property 2003 bulk sample †

Occurrence	Rock Type	Sample Size (tonnes)	Sieve Class Screen Size						Total Diamonds	Total Carat Wt.
			+1	+2	+3	+5	+6	+13		
Genesis-1	Mafic	54.6	1	3	1	3	2	0	10	0.34
Genesis-2	Ultramafic	82.9	16	16	10	3	0	1	46	1.75
Genesis-3	Ultramafic	72.7	4	2	2	0	0	0	8	0.13
Moet	Mafic	47.8	1	2	2	0	0	0	5	0.13

† *information derived from Pele Mountain Inc., press release, March 17, 2004*

In 2004, Pele completed a field program consisting of the collection of more than 2300 kg of bedrock samples from 12 different occurrences. The majority of these samples were collected from occurrences and rock types that have not previously been tested for their diamond content (Pele Mountain Resources Inc., press releases, June 23 and December 10, 2004).

The exploration and sampling program of a series of intermittently outcropping diamond occurrences led to the discovery of 2 diamond-bearing zones where diamonds occur primarily within discrete layers at their base. The South Zone has a surface area measuring approximately 1500 m long by 800 m wide and includes 7 previously defined diamond occurrences. The North Zone has a surface area measuring about 1100 m long by 600 m wide and includes 2 previously defined diamond occurrences (Pele Mountain Resources Inc., press release, January 18, 2005).

Pele Mountain Resources Inc. – Highland Gold Property

Pele Mountain Resources Inc. conducted a spring mechanical stripping and sampling program on the eastern portion of their Highland gold property in Jacobson and Riggs townships. The program focused on an area where bedrock samples collected by Pele in 1999 returned 23.8 g/t gold from a quartz vein and 0.2 g/t gold from adjacent wall rock. The stripping program led to the discovery of a new gold occurrence, the Golden Eagle Zone. A follow-up diamond drilling program (7 holes) tested a 60 m long section of the zone to a vertical depth between 25 and 30 m. Gold assays returned anomalous values up to 0.4 g/t gold from the drill core (Pele Mountain Resources Inc., press releases, March 8, April 6 and May 3, 2004).

Late in the year, Pele Mountain expanded the size of the property through the purchase of 10 patented claims (Smith Claims) in Riggs Township. A follow-up field program of prospecting and sampling led to the discovery of the Macallan gold zone. Grab samples from silicified, carbonatized and sheared mafic metavolcanic rocks returned assay values ranging from less than 1.0 g/t gold to more than 57 g/t gold (Pele Mountain Resources, press release, December 20, 2004).

Platinum Group Metals Ltd. – Lakemount Project

During 2004, Platinum Group Metals Ltd. completed a three-phase diamond drilling program on the Lakemount Project near Wawa. The program consisted of 23 diamond drill holes totalling 4763 m. The company also completed a detailed helicopter-borne, time-domain electromagnetic and magnetic geophysical survey over the entire Lakemount Property. Down-hole UTEM surveys were completed on 16 drill holes comprising the Phase 1 and Phase 2 programs.

The drilling programs confirmed the overall continuity of the 10 to 15 m thick mineralized zones and suggest the potential for discovery of additional higher-grade nickel-copper-PGE zones up to 5 m in thickness. Significant assays from the 2004 drilling include: 0.76% Ni, 0.50% Cu and 0.88 g/t PGE over 7 m in drill hole LK-04-18; 1.0% Ni, 0.38% Cu and 0.59 g/t PGE over 5.0 m from drill hole LK-04-20; and 0.76% Ni, 0.56% Cu and 0.767 g/t Pt+Pd+Au over 11.0 m in drill hole LK-04-16 (Platinum Group Metals Ltd., press releases, August 11 and October 12, 2004).

Probe Mines Limited – Bristol and Godfrey Townships

Probe Mines Limited optioned properties in Bristol Township and Godfrey Township to the north and east of the Timmins Gold Project of Lake Shore Gold Corp. Probe completed geophysical surveys, including IP, as well as geochemical surveys prior to commencing a 10-hole diamond-drilling program.

Diamond drill hole BT04-02 cut gold mineralization averaging 1.9 g/t gold over 11 m. Hole BT04-05 returned an intersection averaging 2.4 g/t gold over 6 m and hole BT04-06 returned many anomalous values up to 0.66 g/t gold over a 9 m section. Drill hole BT04-10 returned 2 separate zones with values up to 0.6 g/t gold over 9 m and 3 m, respectively.

Gold mineralization occurs in 3 distinct geologic settings. Higher-grade gold intersections are associated with mafic to ultramafic rocks that are intrusive into sheared, altered intermediate volcanic rocks near a contact with metasedimentary rocks. Lower-grade gold zones are hosted by fractured, sulphide-bearing metasediments in close proximity to quartz-feldspar porphyry, and within variably altered, quartz-veined quartz-feldspar porphyry. Five mineralized zones have been identified over a distance of 3 km. The mineralized zones trend east to northeast (Probe Mines Limited, press releases, November 30 and December 7, 2004).

Queenston Mining Inc. – Jessop-Gervais Property

Queenston Mining Inc. completed 9.85 km of electromagnetic surveys and 3.6 km of induced polarization surveys on the Jessop-Gervais property in Jessop Township. One diamond drill hole was drilled to a depth of 494 m to test for volcanic-hosted massive sulphide mineralization in an area of coincident gravity, magnetic and IP anomalies. Overburden thickness was 54 m and the drilling encountered pillowed mafic flows with minor graphitic and greywacke metasediments, and feldspar and quartz porphyries (W. Benham, Queenston Mining Inc., written communication, 2005).

Spider Resources Inc. and KWG Resources Inc. – MacFadyen Property

The MacFadyen Property is located in the James Bay Lowlands, 100 km west of Attawapiskat and 8 km northwest of De Beers Canada Inc.'s Victor Project. Spider Resources Inc. and KWG Resources Inc. conducted a 14-hole diamond drilling program on the property in 2004. Three of the drill holes resulted in new kimberlite discoveries. These are referred to as the Good Friday Kimberlite, the MacFadyen #2S Kimberlite and the New Kimberlite. Several attempts were made to intersect a deep magnetic target lying between the MacFadyen #1 and the Good Friday kimberlites by diamond drilling. The magnetic signature remained unexplained at the end of 2004.

The Good Friday Kimberlite is located 300 m northeast of the MacFadyen #1 Kimberlite. Diamond drill hole SPQ-04-01 encountered weathered, crater facies kimberlite at a vertical depth of 47.5 m and hypabyssal facies kimberlite a few metres below the crater facies kimberlite. The drill hole remained in hypabyssal facies kimberlite for 129.5 m. Preliminary analytical results from a 455.2 kg sample of drill core returned 121 diamonds, 10 of which were macro diamonds (>0.5 mm). The 2 largest macro diamonds weighed 0.19 carats and 0.02 carats, respectively. Spider estimates the average grade of all diamonds recovered from the 0.455 tonne sample at 0.15 carats per tonne (Spider Resources Inc., press releases, April 12, May 27, June 15, 2004).

The MacFadyen #2S Kimberlite was intersected at a depth of 65 m in diamond drill hole SPQ-04-03 and is located approximately 50 m from the MacFadyen #2 kimberlite. This kimberlite may represent a second intrusive phase of the MacFadyen #2 pipe. A 70.91 kg sample of this kimberlite yielded 15 micro diamonds. A small kimberlite dike separate from the MacFadyen #2 structure was drilled in the fall and a 4.94 kg sample of core yielded 2 diamonds. The largest diamond weighed 0.0765 carats (Spider Resources Inc., press releases, April 22, June 15, November 1, 2004).

The New Kimberlite was intersected at a depth of 105 m in drill hole SPQ-04-05. Spider suggests that this occurrence may represent a paleosol and, if so, this may be the first mid-Paleozoic kimberlite encountered in the Attawapiskat cluster. Alternatively, this kimberlite may be a 26 m thick horizontal sill related to the adjacent MacFadyen #1 kimberlite. A 78.21 kg sample of kimberlite yielded 3 microdiamonds and 1 macrodiamond (Spider Resources Inc., press releases, April 28 and June 15, 2004).

Spider Resources Inc. and KWG Resources Inc. – Wawa Project

Spider Resources Inc. and joint venture partner KWG Resources Inc. completed an exploration program consisting of mechanical stripping, detailed mapping and sampling specifically focussed on 2 areas where very high macrodiamond counts were returned from 15 kg grab samples. Macrodiamonds were recovered from all ten, 10-kg samples collected from the LAL 2002-156 site. A total of 150 diamonds were recovered from the 0.15 mm screen, including at least 1 macrodiamond from each sample from this area. Three macrodiamonds from one sample (LAL 221) had a combined calculated weight of 0.172 carats. The total calculated weight of the 3 macrodiamonds from sample LAL 223 was 0.116 carats. Of the ten, 10-kg samples collected at the Menzies 156 site, only 3 contained diamonds. The Menzies results are considered inconclusive (Spider Resources Inc, press release, August 16, 2004 and KWG Resources Inc., press release, August 30, 2004). A 5 tonne mini bulk sample was collected from each of the most promising sites (LAL 221 and LAL 223) and are being processed by Lakefield Research's diamond recovery laboratory.

Fifteen, 10-kg regional prospecting samples were also collected. Thirteen of these samples returned diamonds and macrodiamonds were recovered from 6 of the sites.

Valgold Resources Ltd. – Hunter Gold Mine

Valgold Resources Ltd. completed a 13 hole (3027 m) diamond drilling program on the Hunter Mine property located under and on the southeast side of Porcupine Lake in Whitney Township. Because the majority of the Hunter Mine gold zone is located under the lake, the drilling program was conducted from a barge. All but one drill hole intersected mineralization that assayed from 1.0 g/t gold up to 37.9 g/t gold over widths that averaged 1 m. The drilling program extended the known mineralized zone down to the 250 m level (G. Wesa, Valgold Resources Ltd., written communication, 2005; Valgold Resources Ltd., press release, November 19, 2004).

Gold mineralization occurs as a series of high-grade ore shoots within a zone up to 15 m thick over a strike length of 470 m and to a depth of 200 m. Auriferous quartz veins carry minor amounts of pyrite and chalcopyrite and are hosted by a quartz-chlorite-ankerite-sericite schist.

The Hunter Mine was discovered in 1907 and was in production from 1937-40 when it was known as the Porcupine Lake Mine. Total production from the mine amounted to 1230 ounces of gold and 65 ounces of silver produced from 10 769 tons milled. An additional 32 ounces of gold was produced in 1937 from an unspecified amount of material milled, and 102 ounces of gold and 17 ounces of silver were recovered following mill clean up in 1944. Last explored between 1983 and 1990 by Wabigoon Resources Ltd. and Kimex Resources Ltd., the mine has a total reserve of 160 000 tons averaging 0.237 ounces per ton gold (non NI 43-101 compliant).

Vedron Gold Inc. and Laurion Gold Inc. – Davidson-Tisdale Property

Vedron Gold Inc. and Laurion Gold Inc. completed 4 diamond drilling programs on the Davidson-Tisdale Property in Tisdale Township. Drilling targeted the Main Zone, a steeply dipping quartz-sericite-carbonate alteration zone that hosts relatively flat-lying auriferous quartz vein systems.

Previous work established the presence of 5 significant quartz vein systems, situated at surface, 30 m, 100 m, 130 m, and 170 m. Drilling in 2003 intersected a new high-grade vein system at the 200 m level, below the limits of previous exploration.

The first drilling program, consisting of 8 holes, was completed to explore the lower vein systems at depth below the existing workings and previous drilling. The second program, consisting of 8 holes, targeted below the 170 m and intersected new gold-bearing quartz vein systems at 243 m, 274 m, 305 m and 335 m below surface. The third program consisted of 12 drill holes designed to test the extension of the Main Zone east of the existing workings and previous drilling. This program extended the Main Zone an additional 250 m to the northeast. The fourth program, consisting of 4 holes, tested the extension of the main zone to the west. Drilling intersected quartz vein structures anomalous in gold. Gold values were not as high as in the core of the Main Zone. Drilling in 2004 increased the strike length of the Main Zone 325 m for a total length of 525 m.

Vedron also completed a small diamond drill program on the Fuller Zone consisting of 7 holes totalling 1328 m. The Fuller Zone property is located in southern Tisdale Township.

Windarra Minerals Ltd. – Pukaskwa Property

Windarra Minerals Ltd. entered into an option agreement with Messina Minerals Ltd. on Messina's Pukaskwa Property, situated in the Camp Lake area of the Mishibishu Lake greenstone belt. The property includes the Champagne Vein where, in the late 1980s, Noranda Exploration Company Limited outlined a resource of 80 000 tonnes grading 15.0 g/t gold. The resource calculation is non NI 43-101 compliant.

A late fall prospecting program focused on the evaluation of the 8 km strike length of the East Pukaskwa Deformation Zone that hosts the gold occurrences. A new gold occurrence was discovered 5 km east of the Champagne Vein. Grab samples from the quartz vein returned assays ranging from 12.2 g/t gold to 62.0 g/t gold (Windarra Minerals Ltd., press release, November 25, 2004; J. Pallot, Windarra Minerals Ltd., personal communication, 2005).

Young-Shannon Gold Mines, Limited – C Prime Gold Deposit

Young-Shannon Gold Mines, Limited completed a 6 hole (1564 m) diamond drilling program on their Chester Township property. Significant assays from the drilling program included a 10 foot section of core from drill hole YS04-6 that assayed 28.13 g/t gold (uncut) and included a 4 foot section that assayed 67.82 g/t gold. Gold values in the C Prime deposit are usually associated with single and multiple veins containing free gold, chalcopyrite, pyrite, tellurides, molybdenite, galena and specularite (Young-Shannon Gold Mines, Limited, press release, September 22, 2004).

The diamond drill program confirmed a total strike extent of over 900 feet and a down-dip extent of 600 feet for the C Prime gold deposit. In addition, some of the drill holes intersected zones, up to 14 m wide, where gold values extend into the wall rock (Young-Shannon Gold Mines, Limited, press release, September 22, 2004).

Table 11. Exploration activity in the Timmins District in 2004

Abbreviations

AEM	Airborne electromagnetic survey	HM	Heavy mineral sampling
AM	Airborne magnetic survey	IP	Induced polarization survey
ATEM	Airborne time domain electromagnetic survey	Lc	Linecutting
Bulk	Bulk sampling	MMI	Mobile Metal Ion geochemical survey
Comp	Compilation	OD	Overburden drilling
DD	Diamond drilling	PEM	Pulse electromagnetic survey
DGP	Down hole geophysical survey	Pr	Prospecting
GC	Geochemical survey	RES	Resistivity survey
GEM	Ground electromagnetic survey	Samp	Sampling (other than bulk)
GL	Geological survey	Stripping	Stripping
GM	Ground magnetic survey	Tp., tps.	Township, townships
Grav	Gravity survey	Tr.	Trenching
GT	Geotechnical survey	UG	Underground
HLEM	Horizontal loop electromagnetic survey	VLF-EM	Very low frequency electromagnetic survey

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
1	1478837 Ontario Inc.	Chester Tp.	Lc, GM, VLF-EM
2	2004428 Ontario Inc. (Bobs Lake Property)	Whitney Tp. (Au)	GM, Lc
3	2004428 Ontario Inc. (Redstone Mine)	Langmuir Tp. (Ni)	DD-2-323 m
4	6070205 Canada Inc.	Godfrey Tp. (Cu, Zn)	GM
5	Admiral Bay Resources Inc., James Bay Energy Inc. (Moose River Basin Coalbed Methane Project)	Kipling, Sanborn, Gentles, Gardiner tps., West of Gentles Area (coal bed methane)	DD
6	Alliance Explorations Inc.	Swayze, Rollo tps. (Au, Cu, Zn)	Pr
7	Annett, R., Mustang Minerals Corp. (Sinclair Property)	Nursey Tp. (Au, Cu, Zn)	AM, ATEM
8	Arctic Star Diamond Corp., Big Red Diamond Corporation, Dumont Nickel Inc., Kel-Ex Development Ltd., Metalex Ventures Ltd. (Attawapiskat Property)	BMA 528 841, BMA 528 834, BMA 528 833, BMA 527 841, BMA 527 834, BMA 527 833, BMA 526 834, BMA 526 833, BMA 526 832, BMA 525 834, BMA 527 833 (diamonds)	DD, Samp, OD, AEM, AM, HM
9	Arctic Star Diamond Corp., Kel-Ex Development Ltd., Metalex Ventures Ltd. (Kyle Project)	(diamonds)	DD, Samp
10	Argent Resources Ltd. (Timmins Offsets Property)	Tully Tp. (Au)	DD-13-3972 m, Samp
11	Aurora Platinum Corp.	Montcalm Tp. (Ni, PGE)	DD-4-1542 m
12	Avalon Ventures Ltd.	Warren Tp. (anorthosite)	Bulk (2 tonne)
13	Band-Ore Resources Ltd. (Thorne Property)	Thorneloe Tp. (Au)	DD-45-9730 m, Samp
14	Becker Gold Mines Ltd.	Montcalm, Poulett, Belford, Watson tps.	AM, ATEM
15	Canadian Arrow Mines Ltd. (Alexo Project)	Dundonald, Clergue tps. (Ni, Cu, PGE)	DD-118-9640 m, GC, Bulk (2 @ 10 000 tonnes)
16	Canadian Golden Dragon Resources Ltd. (Four Corners Property)	Kenogaming, Penhorwood, Reeves, Sewell tps. (Au)	GM, VLF-EM
17	Canadian Golden Dragon Resources Ltd.	Reeves, Penhorwood tps. (Au)	Lc, IP

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
18	Candor Ventures Corp., Geocanex Ltd. (McFaulds Lake Property)	BMA 527 861 (Cu, Zn, Ag, Au)	Lc, GM, GEM
19	*Candorado Operating* Co. Ltd.	Lower Detour Lake Area (Au)	Lc, GM, IP
20	Caron, M.	Tisdale Tp. (Au)	GL, Lc, HLEM
21	Claim Lake Resources Inc.	Hutt, Zavitz tps. (Au, Cu, Zn)	Lc, VLF-EM GM
22	Comaplex Minerals Corp., Porcupine Joint Venture	Thornloe Tp. (Au)	DD-2-499.6 m
23	Conquest Resources Limited, Trade Winds Ventures Inc. (Aurora Property)	Lower Detour Lake Area (Au)	DD-6-2326 m, GC, Samp, Assays
24	De Beers Canada Inc. (Victor Project and Attawapiskat Kimberlite Projects)	BMA 527 834 (diamonds)	Engineering, mine design
25	Don Mc Holdings	Hurdman Tp. (Zn)	Lc, GM
26	Eastmain Resources Inc., Noranda Inc. (Megatem Abitibi Project)	Abitibi Subprovince (Cu, Zn, Ag, Au)	AM, AEM, GEM
27	Eloro Resources Ltd. (DeSantis Property)	Turnbull Tp. (Au)	Tr, Samp, Assays
28	Explorers Alliance Corporation	Bristol Tp. (Au, Cu, Zn)	DD-1-250 m, Samp
29	Explorers Alliance Corporation	Denton Tp. (Au, Cu, Zn)	DD-1-30 m
30	Explorers Alliance Corporation	Mountjoy, Jessop tps. (Au, Cu, Zn)	DD-11-1979 m, Samp, Assays
31	Explorers Alliance Corporation	Robb Tp. (Au, Cu, Zn)	DD-1-234 m
32	Falconbridge Limited, Noranda Inc., Wallbridge Mining Company Limited, Nuinsco Resources Limited (Timmins Joint Venture Property)	Kidd Munro Area and Halliday Dome Area (Ni, Cu, Zn)	DD, GM
33	Falconbridge Limited	Carscallen Tp. (Cu, Zn)	DD-1-233 m, Samp, Assays, HLEM, GM
34	Falconbridge Limited	Carscallen, Fournier, Godfrey, Reaume, Whitesides tps. (Cu, Zn)	GM, HLEM
35	Falconbridge Limited	Reid Tp. (Cu, Zn)	DD-2-456 m
36	Falconbridge Limited	Turnbull Tp. (Cu, Zn)	DD-2-433 m
37	Fancamp Explorations Ltd. (McFaulds Lake)	BMA 526 862, BMA 527 862 (Cu, Zn, Ag, Au)	AEM, AM
38	First Nickel Inc. (Dundonald Nickel Property)	Dundonald Tp. (Ni, Cu, PGE)	DD-76-13 498 m, PEM, GM, Lc
39	Glencairn Gold Corporation (Vogel Property)	Hoyle Tp. (Au)	DD - 10 000 m
40	Globex Mining Enterprises Inc. (Deloro Property)	Deloro Tp. (talc, magnesite)	DD-4-247.7 m, Samp, GC
41	Gowest Amalgamated Resources Ltd. (Frankfield Property)	Tully Tp. (Au)	DD-23-6151 m, Samp
42	Grant Forest Products Corp.	Ogden Tp. (Au)	GL, Str, Lc, GM
43	Greenshield Resources Ltd. (A-zone)	Newton Tp. (Au)	DD-23-961 m, Assays
44	Inco Limited	Duff, Evelyn, Hanna, Mahaffy, Mann, Reaume tps. (Ni)	GM, HLEM
45	JML Resources Ltd. (Horwood Gold Property)	Horwood Tp. (Au)	Lc, GM, IP, Samp, Assays
46	Korba, E.J.	Whitney Tp. (Au)	GM
47	Lalonde, D.J.	Byers Tp. (Ni, Cu)	Lc, GM, HLEM
48	Lalonde, D.J.	Massey, Whitesides tps. (Ni, Cu)	GM

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
49	Lake Shore Gold Corp., Holmer Gold Mines Limited (Timmins Gold Project)	Bristol Tp. (Au)	DD-36-17 687 m, Samp
50	Lake Shore Gold Corp., Band-Ore Resources Ltd. (Thunder Creek Property)	Bristol Tp. (Au)	GL, Tr, GC, DD-12-4100 m, Samp
51	Lake Shore Gold Corp.	Ogden Tp. (Au)	GC, DD-1-329 m
52	Lashbrook, R.L.	Benton, Heenan tps. (Au, Cu, Zn)	Lc, VLF-EM
53	Laurion Gold Inc.	Shaw Tp. (Au)	GL
54	L.B.L. Richgold Mines Incorporated	Ogden Tp. (Au)	Pr, Samp, Assays
55	Leeward Capital Corp. (Attawapiskat Project)	BMA 521 831, BMA 521 832, BMA 521 834, BMA 522 832, BMA 523 824, BMA 523 831, BMA 523 832, BMA 524 824, BMA 524 831, BMA 524 832, BMA 525 824, BMA 526 824, BMA 526 832 (diamonds)	Grav, OD
56	Liberty Mineral Exploration Inc. (Dundonald Project)	Dundonald Tp. (Ni, Cu)	Lc, HLEM
57	Liberty Mineral Exploration Inc. (McWatters Property)	Langmuir Tp. (Ni, Cu)	DD, GM, PEM
58	Liberty Mineral Exploration Inc.	Langmuir Tp. (Ni, Cu)	PEM, DD-2-439 m
59	Macdonald Mines Exploration Ltd. (Big Mac Property)	BMA 531 831, BMA 531 854, BMA 531 861, BMA 531 862, BMA 532 861, BMA 532 862 (Cu, Zn, Pb, Ni, PGE, Ti, V)	AEM, AM, GEM, GM, DD-10, Assays
60	McKinnon, D., James Bay Energy Inc.	McBrien, Sanborn, Kipling tps. (methane)	Soil gas Samp
61	Meunier, D., Western Kidd Resources Inc.	Loveland Tp. (Cu, Zn, Ag, Au)	DD-9-2561 m, PEM, Samp, Assays, IP, GL
62	Moneta Porcupine Mines Inc.	Loveland Tp. (Ni, Cu)	Lc, GM, HLEM, IP
63	Moneta Porcupine Mines Inc.	Murphy Tp. (Au, Cu, Zn)	IP, DD-1-806 m, Assays
64	Moneta Porcupine Mines Inc.	Tisdale Tp. (Au, Cu, Zn)	DD-6-1276 m, Samp, Assays
65	Moneta Porcupine Mines Inc., Geodex Minerals Ltd. (Potter Stock Project)	Pyne, Aurora, Newmarket, Hanna, Mann, Edwards, St. John tps. (Au)	Lc, GC
66	Morin, D.	Mallard Tp. (Au, Cu, Zn)	Pr, Samp, Assays
67	Mustang Minerals Corp.	Semple, Sothman, Eldorado, Adams, Deloro, Douglas, McArthur tps. (Ni, Cu)	AEM, AM, Comp
68	Noront Resources Ltd., Freewest Resources Canada Inc. (McFaulds Lake Property)	BMA 527 861 (Cu, Zn, Ag, Au)	DD
69	Northern Shield Resources Inc. (Highbank Lake Property)	BMA 524 861, BMA 524 862 (Ni, PGE)	GC, MMI, GM, IP, DD-1-496 ft
70	Northern Shield Resources Inc. (Bradley Property)	Bradley, Sandborn, Acres, McCausland tps. (diamonds)	GM, DD-3-1010 ft
71	Northern Shield Resources Inc. (Faint Hope Project)	Ireland, Aggasiz tps. (diamonds)	GM, GC
72	Osprey Gold Corp. (Jerome Mine)	Osway Tp. (Au)	DD-7-3560 ft
73	Pacific Northwest Capital Corp. (West Timmins Project)	Montcalm, Nova, Poulett, Strachan, Watson tps. (Cu, Ni, PGE)	AEM
74	Pelangio Mines Inc., High River Gold Mines Ltd. (Detour Lake Project)	Lower Detour Lake, Sunday Lake, West of Sunday Lake (Au)	DD-19- ~7000 m, GC, Comp, Assays
75	Pelangio Mining Corp., Trade Winds Ventures Inc. (Block A)	West of Sunday Lake, Hopper Lake (Au)	DD-17 000 m

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
76	Pele Mountain Resources Inc. (Attawapiskat Project including West River Property)	BMA 527 832, BMA 527 833, BMA 527 834, BMA 528 833, BMA 528 834, BMA 528 841, BMA 531 834, BMA 531 841 (diamonds)	DD
77	Pele Mountain Resources Inc. (JBL Project)	BMA 515 861, BMA 522 843, BMA 524 844, BMA 525 844, BMA 525 851, Dainty Lake, East of Dusey River, East of Missisa Lake (diamonds)	GM
78	Pele Mountain Resources Inc., P. Gryba (Jamieson Polymetallic Property)	Godfrey, Jamieson, Robb tps. (Au, Ag, Cu, Zn)	Tr, Samp
79	Pele Mountain Resources Inc. (Timmins Nickel Property)	Geikie, Bartlett tps. (Ni, Au)	DD-4-977 m, Samp, Assays
80	PGM Ventures Corporation, (Nixon-Bartleman Property)	Keefer Tp. (Au)	DD
81	Porcupine Joint Venture	Ogden Tp. (Au)	DD-2-499 m, Samp, Assays, RES, IP
82	Probe Mines Limited (Bristol Township Property)	Bristol, Godfrey tps. (Au)	GM, IP, GC, MMI, DD-10
83	Probe Mines Limited (McFaulds Lake)	BMA 527 854, BMA 527 861, BMA 528 854, BMA 528 861 (Cu, Zn, Ag, Au)	GEM, DD-5-1000 m, Assays
84	Queenston Mining Inc. (Gervais - Jessop Property)	Jessop, Murphy tps. (Cu, Zn, Ag, Au)	GEM, IP, RES, DD-1-494 m, Samp, Assays
85	Raine, B.N.	Cody Tp. (Au)	Samp, Assays
86	Richmont Mines Inc. (Sewell Property)	Sewell Tp. (Au)	DD-4-1034 m
87	Richmont Mines Inc. (Cripple Creek Property)	Denton Tp. (Au)	DD-4-1901 m
88	Salo, R.W.	Langmuir Tp. (Ni, Cu)	GM
89	Seagreen Capital - Explorers Alliance Corporation	Godfrey Tp. (Cu, Zn)	DD-2-453 m, Samp
90	Spider Resources Inc., KWG Resources Inc. (MacFadyen Project)	BMA 528 834, BMA 527 834 (diamonds)	DD-14, Samp
91	Spider Resources Inc., KWG Resources Inc., Diagem International Resource Corp., (McFaulds Lake Property)	BMA 527 861, BMA 528 861 (Cu, Zn, Ag, Au)	DD-36, GM, HLEM, GEM, DGP, Grav
92	St. Andrew Goldfields Ltd. (Clavos Project)	Stock, German Tps. (Au)	DD- 4300 m, UG Bulk, UGDD-8784 m, 1500 m ramp
93	St. Andrew Goldfields Ltd. (Stock Mine)	Stock Tp. (Au)	DD-995 m, UGDD-5000 m
94	Strongbow Exploration Inc., Superior Diamonds Inc. (Kat Project)	BMA 526 834, BMA 527 834, BMA 528 834, BMA 528 841, BMA 531 841 (diamonds)	AEM, AM
95	Superior Diamond Prospecting Syndicate (Fulton River)	BMA 513 814 (diamonds)	AM
96	Superior Diamonds Inc., Inco Limited (Winisk Project)	BMA 541 864, BMA 542 864, BMA 543 864, BMA 544 864, BMA 545 864 (diamonds)	GC
97	Tom Exploration Inc.	Bristol, Ogden tps. (Au)	DD
98	Trade Winds Ventures Inc., Gowest Amalgamated Resources Ltd. (Detour West)	West of Sunday Lake, Hopper Lake (Au)	DD-19-2390 m
99	Valgold Resources Ltd. (Hunter Mine)	Whitney Tp. (Au)	DD-13-3027 m, Assays

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
100	Vedron Gold Inc. (Fuller Zone)	Tisdale Tp. (Au)	Lc, DD-7-1327.8 m
101	Vedron Gold Inc., Laurion Resources Inc. (Davidson-Tisdale Property)	Tisdale Tp. (Au)	Lc, DD-28-7067 m, Assays
102	Vencan Gold Corp. (Cayenne Property)	Heenan, Benton, Marion tps. (Au)	GL, Str, Samp, GM, GEM
103	Vision Lake Mining Inc.	Robb Tp. (Au, Cu, Zn)	Lc, GM
104	Volcanic Metals Exploration Inc. (Shaw Tp. Property)	Shaw Tp. (Cu, Zn, Ag)	DD-4-656 m, Samp, Assays
105	Wallbridge Mining Company Limited, Seymour Exploration Corp. (Wakami Project)	Wakami Tp. (Ni, Cu, PGE)	GL, Pr, Str, Samp, Assays, AM, AEM, DD, IP
106	Wallbridge Mining Company Limited, Mountain Lake Resources Inc. (Hong Kong Project)	Hong Kong Tp. (Ni, Cu, PGE)	AM, AEM, Pr, Samp
107	Wallbridge Mining Company Limited, (Hong Kong Project)	Edith, Cavell, Carew, Joffre tps. (Ni, Cu, PGE)	AM, AEM
108	Waseco Resources Inc. (Attawapiskat Property)	BMA 528 834, BMA 527 834 (diamonds)	Lc, GM
109	Western Kidd Resources Inc.	Reid Tp. (Cu, Zn)	DD-1-176 m, Samp
110	Woodruff Capital Management Inc.	Loveland Tp. (Cu, Zn)	Lc, GM
111	Young-Shannon Gold Mines, Limited (C Prime Gold Deposit)	Chester Tp. (Au)	DD-6-1563.6 m, Assays

Table 1.2: Exploration activity in the Wawa area in 2004

Abbreviations

AEM	Airborne electromagnetic survey	GM	Ground magnetometer survey
AM	Airborne magnetic survey	HM	Heavy mineral sampling
Bulk	Bulk sampling	IP	Induced polarization survey
Comp	Data compilation	Lc	Linecutting
DD	Diamond drilling	Pr	Prospecting
DDH	Diamond drill hole(s)	Samp	Sampling (other than bulk)
GL	Geological survey	Str	Stripping
GEM	Ground electromagnetic survey	Tr	Trenching
		UG	Underground development

No	Company/Individual (Occurrence Name or Property)	Township/Area (Commodity)	Exploration Activity
1	3814793 Canada Inc. (Baithoquet Property)	Baithoquet Tp. (diamond)	GL, GM
2	3814793 Canada Inc. (Chabanel Property)	Chabanel Tp. (diamond)	DD:4-294 m, GEM, GL, GM, Samp
3	3814793 Canada Inc. (Crisp Lake Property)	Chabanel Tp. (diamond)	GEM, GM, Samp
4	3814793 Canada Inc. (Hart Mine Group)	Chabanel Tp. (diamond)	GEM, GM, Samp
5	3814793 Canada Inc. (Hendrix Lake Property)	Esquega Tp. (diamond)	GEM, GM
6	3814793 Canada Inc. (Lineup 11 Claim)	Leitrim and McMurray tps. (diamond)	GEM, GL, GM, HM
7	3814793 Canada Inc. (Lyndhurst Property)	Lyndhurst Tp.	GEM, GM
8	Aztec Star Diamond Corp. and Chevis Diamond Exploration IV (Chevis Property)	Menzies Tp. (diamond)	Bulk, DD:3-300 m, GL
9	Bend Lake Resources Ltd. (Cowbiers Property)	Cowbiers Tp. (Au)	AM, Ly, DD:0-1791 m
10	Bend Lake Resources Ltd. (ESS Property)	Musquash Tp. (diamond)	Pr, SW
11	Bridget Lake Resources Ltd. (Bridget Lake Property)	Rabaco Tp. (Au)	AM
12	Corona Gold Corporation and Hartic Gold Corp. (Sugar Zone)	Hambleton and Odlum tps. (Au)	DD:37-8200 m
13	Gold Insight Resources Ltd. (Manitou Mountain Group)	Riggs Tp. (diamond)	Pr, HM
14	Gowest Amalgamated Resources Ltd. and Jonpol Investments Ltd. (Wawa Property)	Chabanel Tp. (Au)	Samp
15	Holmer Gold Mines Limited (Murphy Mine)	Abotossaway Tp. (Au)	DD:15-8335 ft
16	Hunter, H.P. (Mink Lake Gold Property)	Chabanel Tp. (Au)	Assays, Samp
17	Mckinnon, D. (Hawkins Property)	Hawkins Tp. (Au)	GL, Str
18	Michano, D., Grenat, B., Carson, J. and Kelso, T. (Obonga Property)	Abbie Lake Area (Au)	Assay, GC, Pr, Tr
19	Mineral Resources Inc. (Michibichi Property)	Michibichi Lake Area (Au)	Assay, Comp, GL, Pr, Samp

No.	Company Individual (Alternative Name to Property)	Township Area (Commodity)	Exploration Activity
20	Patricia Mining Corp. (Ogo Mine Property)	Abotossaway Tp. (Au)	Assay, Pr. Samp.
21	Patricia Mining Corp. (Riggs Property)	Riggs Tp. (Au)	Assays, DD(8,324 m)
22	Patricia Mining Corp. and Richmont Mines Inc. (Island Gold Project)	Finan Tp. (Au)	Assays, DD(3-7, 1600 m surface), UG
23	Pele Mountain Resources Inc. (Festival Property)	Lalibert, Menzies, Musquash tps. (diamond)	GL., Pr. Samp. Str.
24	Pele Mountain Resources Inc. (Highland Gold Property)	Jacobson and Riggs tps. (Au)	DD(-7, Pr. Samp. Str.
25	Platinum Group Metals Ltd. (Lakemount Property)	Esquega Tp. (Cu, Ni, PGM)	AEM, AM, Assays, DD-23-4763, Pet, UTEM
26	River Gold Mines Ltd. (Mishi-Magnacon Complex)	Mishibishu Lake Area (Au)	Assays, DD, UG
27	Spider Resources Inc. and KWG Resources Inc. (Wawa Project)	Lalibert and Menzies tps. (Au)	Bulk, GL., Samp, Str.
28	Strike Minerals Inc. (Pheasant Claim)	Jacobson Tp. (Au)	DD(-)
29	Teck Cominco Ltd. (Hart Project)	Finan Tp. (Au)	DD, IP, Ec.
30	Thunder Mound Resources Inc. (Pipe Lake Property)	Pipe Lake Area (Au)	Assay, Pr. Samp. Tr.
31	Tremblay, M. and Bullett, J. (Tembladera Gold Property)	Lyscom Tp. (Au)	Pr. Samp. Str.
32	Tremblay, M., Bullett, J. and Hand Exploration Ltd. (Black Sea Property)	Jacobson and Riggs tps. (Au)	Assays, DD(2-4K) m, Samp, Str.
33	Wesdome Minerals Ltd. (Yorkshire Property)	Camp Lake and David Lakes areas (Au)	Assays, Pr.

RESIDENT GEOLOGIST PROGRAM STAFF AND ACTIVITIES

The Timmins Resident Geologist Office was staffed by B.T. Atkinson, Regional Resident Geologist, G.Wm. Scott, and A.C. Wilson, District Geologists, and V.J. Bulman, District Support Geologist. A.C. Wilson provided on-going field services to clients in the Wawa area through bi-weekly visits during the field season from May to October. M. Picotte and R. Price provided summer field and office support under the Summer Experience Program 2004.

The Timmins office also serves as the regional office for the Northeast Ontario Regional Resident Geologist Program. J.C. Ireland is the Regional Manager responsible for the Timmins and Kirkland Lake regional offices and the Sudbury and Sault Ste. Marie district offices. F. Boucher is the Administrative Assistant, D.M. Draper is the Cartographer and GIS Specialist / Regional Support Geologist and R. Fraser provided the Regional Land Use Geologist services for northeastern Ontario until September. Summary statistics are provided in Table 13.

Table 13. Summary of staff activities, Timmins Regional Resident Geologist Office, 2004.

Activity	
Assessment files received (including donations)	131
Client visits - Office	1193
Client visits - Drill Core Library	50
Geological tours given	10
Geoscience library additions (reports, papers, maps)	65
Property visits by staff	56
Telephone inquiries	1304
MDI records AD(0-1)	86
MDI records D(1-3)(1-3)	283
MDI records DL(1-3)(1-3)	10

PROPERTY EXAMINATIONS

A number of property visits made during the course of the year by staff at the Timmins Regional Resident Geologist office are described below. Property visits provide geological insight into an area and help to identify the key indicators that could be deemed favourable for the discovery of new mineral deposits. Recommendations for exploration derived from property visits are presented in a separate section of this report.

Gold in the Kamiskotia Gabbroic Complex; the Desantis Prospect and the Mountain of Gold Occurrence

The Desantis Prospect and the Mountain of Gold Occurrence are in the southwest corner of Turnbull Township, west of the city of Timmins. Road access from Timmins is by the Mallette industrial road that leads north and then west off Highway 101 just west of the Tembec sawmill.

At the time of writing, S.D. Anderson of Timmins and Eloro Resources Ltd. are the recorded holders of claims covering the Desantis Prospect while R.R. Rousseau of Timmins holds claims covering the Mountain of Gold occurrence.

Finlay (1925) wrote about the Kamiskotia gold area describing many gold properties in and around the gabbro.

> "The Hailey burian gabbro is generally very massive, though in some cases it has been sheared and fractured and in these localities veins have been found. The great majority of the veins occur within the Algoman intrusives, and the various acid stocks and dikes, and the rock immediately adjacent to their contacts, should be those most carefully prospected."

cins is simple. The native gold occurs with pyrite and chalcopyrite, generally in
also replaces the wall rock to a certain extent. Calcite, ankerite and chlorite are
able amounts. The latter forms streaks or lenses in the veins or may cut the wall rock
ates often form a selvage on the sides of the veins. Tourmaline, specularite, and
rare."

a quartz vein traced on surface for about 180 m and to depth by a 125 foot
as by surface diamond drilling. Gold is associated with pyrite and
dths up to 1.5 m. The quartz vein occurs along the contact of a granite dike
north-striking Matachewan diabase dike cuts both the gabbro and the
e vein has yielded samples as high as 2.07 ounce per ton gold, while
outhern extent of the vein yielded 77.35 g/t gold. Underground sampling
1985 yielded few encouraging assays.

s prospect, is the Mountain of Gold property. Several gold occurrences in
d on a prominent low hill of gabbro cut by granite dikes. A large trench
pyrite vein 2 m to 3 m in width. The vein appears to strike 015°/60° ESE. The
ain the quartz. The pyrite is sub- to euhedral and coarse-grained with the
euhedral and coarse-grained. The wall rock on the western side of the vein is
y, which is pervasively and strongly altered with iron carbonate. A grab
vein returned 1.5 ounces per ton silver while samples from the quartz vein and
st wall rock to the quartz vein is a fine-grained gabbro or diabase.

ted several areas around the Mountain of Gold property. The writer (Seim)
expose similar geology to the main occurrence, but the quartz-sulphide veins
ng strikes and dips. However, all appear to be gold-bearing. One of the
extension of the main occurrence, but the 2 others visited are well off this
ar the quartz veins is very fine-grained and may be rafts of mafic metavolcanic
last site visited, the quartz veining is within, and possibly on the west contact
o.

les from the Mountain of Gold Occurrence. (N.D. = not detected.)

Sample Type	e 17) and Description	Au Oz./ton	Ag Oz./ton
	448108E 5367048N		
Grab	quartz with a 2 cm wide pyrite vein, pyrite vein is 50% grey quartz and	0.09	N.D.
	50% coarse, subhedral crystals of pyrite		
Grab	d pyrite	0.03	N.D.
Grab	quartz vein, 1% diss. med.-grained subhedral pyrite	0.03	1.5
Chip 30 cm	quartz and pyrite	0.58	N.D.
Chip	material on floor of trench	0.26	N.D.
Grab	e	0.05	N.D.
	448253E 5366998N		
Grab	occurs on a fine semi-massive vein (possibly with sphalerite), and as	0.14	N.D.
Grab	occurs on a fine semi-massive vein (possibly with sphalerite), and as	0.16	N.D.
	448130E 5366978N		
Grab	to coarse-grained euhedral py and white quartz vein	0.05	N.D.
Grab	ourmaline/chlorite seam, and trace coarse euhedral py	0.08	N.D.
	448111E 5367014N		
Grab	al pyrite with 15-20% white quartz	0.21	N.D.
Grab	to coarse-grained, disseminated euhedral pyrite	0.04	N.D.

The Desantis prospect and the Mountain of Gold occurrence appear to the associated with a north-trending structure that is subparallel to the Matachewan diabase dikes in the area. Middleton (1976) mapped several small granitic intrusions within the Kamiskotia gabbro. The contacts of the granite intrusions with gabbro, especially where the contact is north trending, are prospecting targets for quartz-sulphide veins similar to those found at the Desantis prospect and at the Mountain of Gold occurrence.

Figure 4. Prospector R. Rousseau atop the main trench at the Mountain of Gold occurrence (view to south).

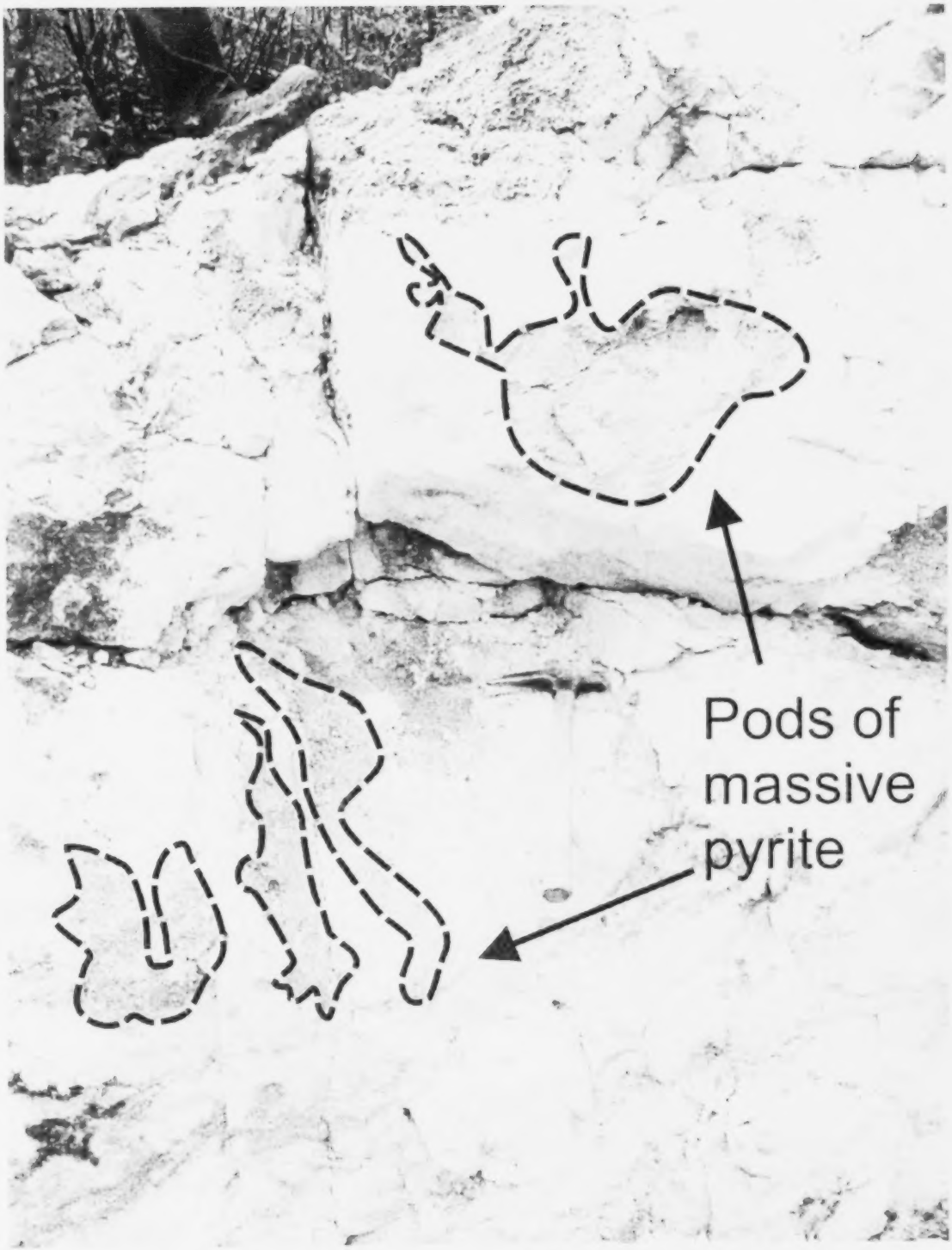

Figure 5. Pods of massive, euhedral pyrite crystals (grey) in white quartz, main trench, Mountain of Gold occurrence.

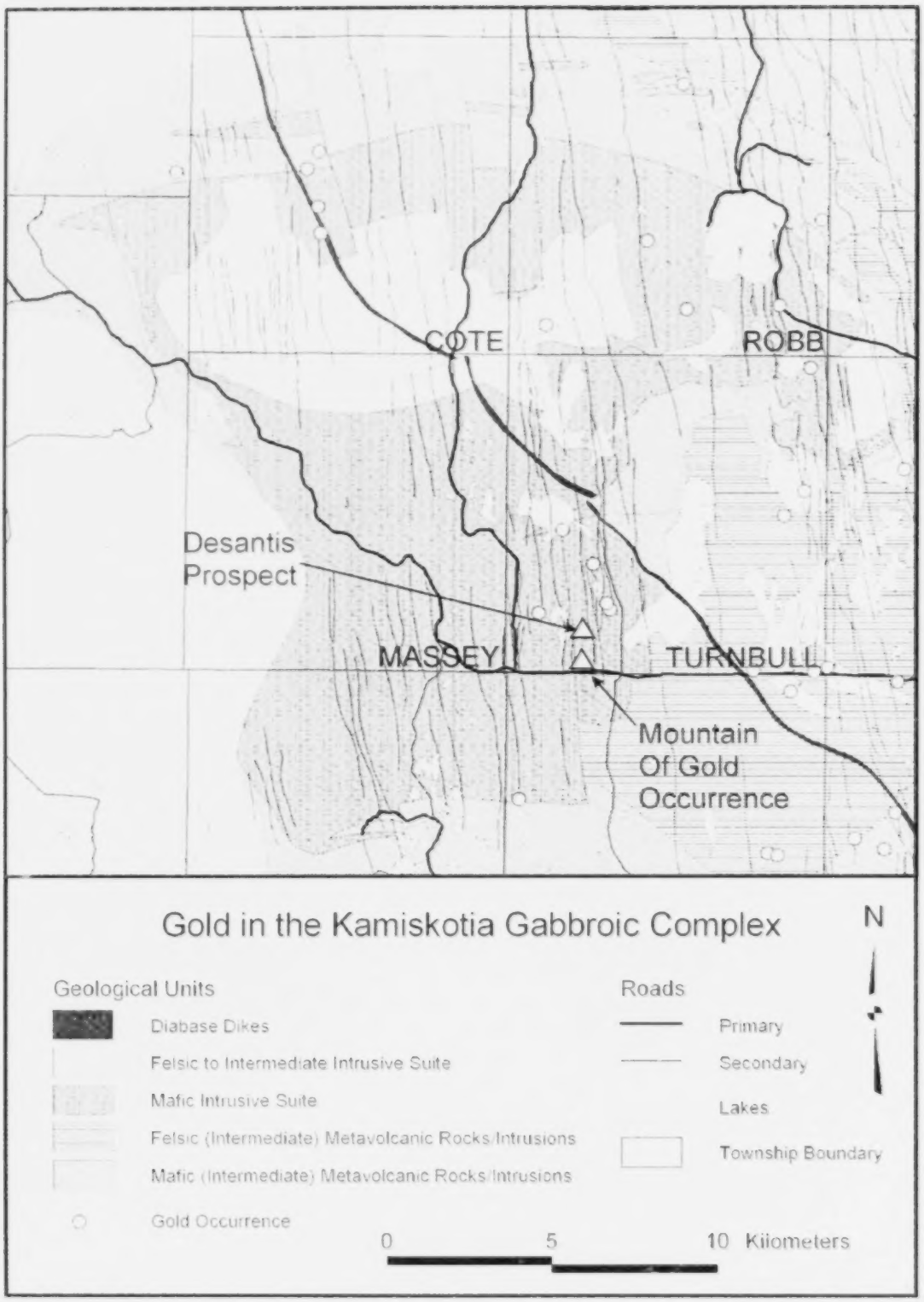

Figure 6. Geology and gold occurrences of the Kamiskotia Gabbroic Complex (Geology *adapted from* Ayer and Trowell 1998).

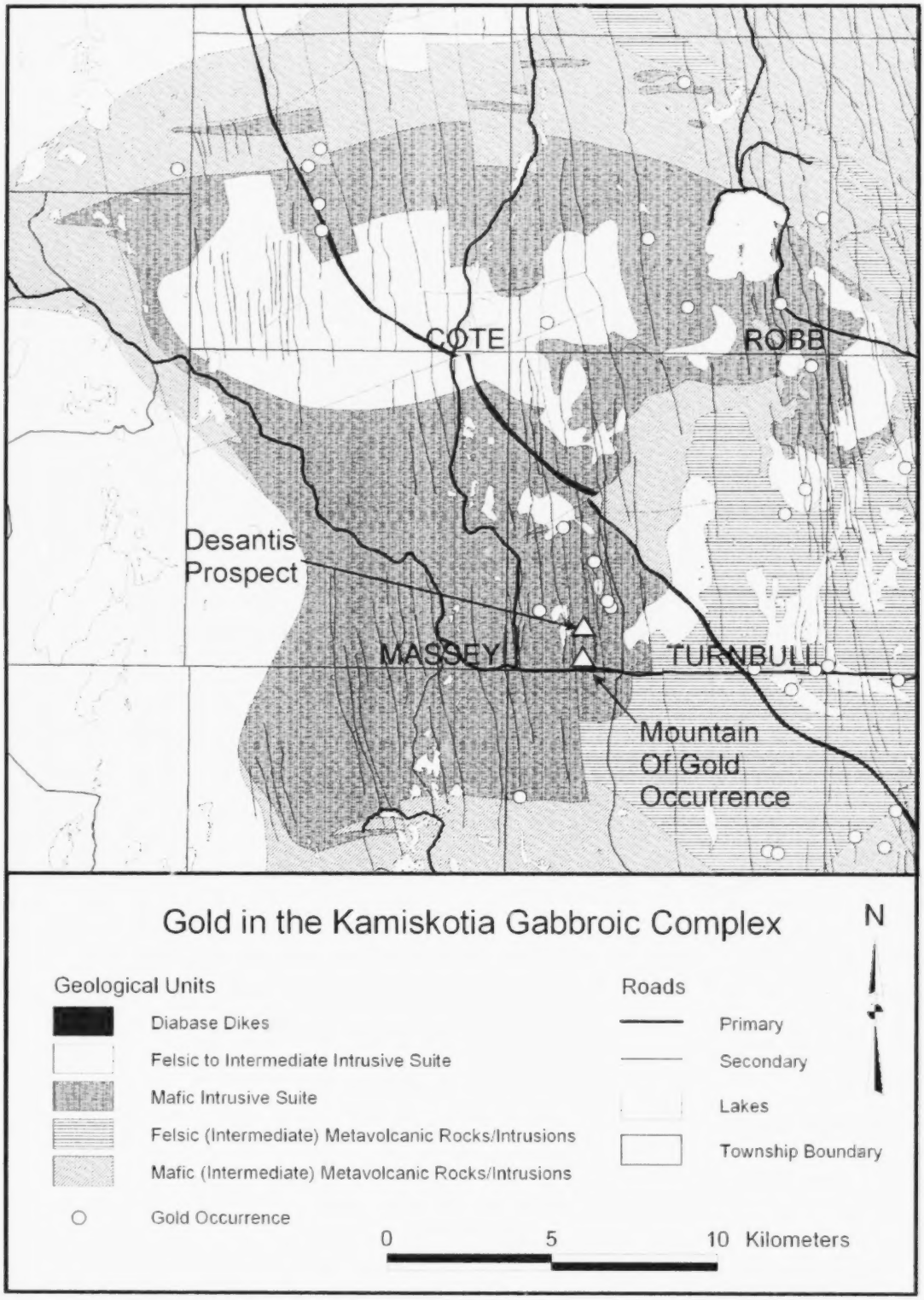

Figure 6. Geology and gold occurrences of the Kamiskotia Gabbroic Complex. (Geology *adapted from* Ayer and Trowell 1998.)

Telluride Bay Copper Occurrence – English Township

The Telluride Bay Copper Occurrence is located on the north shore of Telluride Bay of Muskasenda Lake, about 50 km south of Timmins (UTM coordinates (NAD27 Zone 17) 475602E 5324259N). Access is by a network of bush roads that lead to Muskasenda Lake from Pine Street South in Timmins. A boat or canoe is required to access Telluride Bay from the road access point on Muskasenda Lake.

The area at the south end of Muskasenda Lake witnessed considerable exploration for gold that started in the early 1900s and is still ongoing. Exploration to date has resulted in the discovery of a number of gold occurrences and prospects. Several reports on the area mention a copper showing on the north shore of Telluride Bay, but there is little reported on the extent of exploration or tenor of the mineralization.

Evans (1968) writes, "pyrite, chalcopyrite, with minor bornite are associated with a fracture system in a quartz sericite [*sic*] schist (Rhyolite). This exposure is approximately 40 feet wide and to the west it is in immediate contact with a rhyolitic feldspar porphyry." Mapping by Evans (1968) indicates both the quartz-sericite schist and the rhyolitic feldspar porphyry trend north to north-northeast.

Based on mapping completed in 1967 and 1968, Bright (1984) describes the mineralization as "disseminated pyrite and chalcopyrite in the sheared portion of an easterly-trending quartz-feldspar dike. The dike itself cuts north trending intermediate to felsic metavolcanics, but the north-east trending shear zone, where exposed, only cuts the quartz-feldspar porphyry dike." The felsic metavolcanic unit is contained, possibly as a large raft, in the Muskasenda Lake gabbroic intrusion.

Pyke (1977) mapped the intermediate to felsic metavolcanic rocks but not the quartz-feldspar porphyry dike described by Bright. This may be due to an 8 foot rise in the water level of Muskasenda Lake after 1968. Other rock units mapped along the water line of Muskasenda Lake are no longer above water.

Staff of the Timmins Regional Resident Geologist office made a brief stop at the Telluride Bay copper occurrence in August while doing reconnaissance on Muskasenda Lake in the search for pebbly lamprophyre outcrops described by Bright (1984). It was determined that the exposures of the lamprophyres are now under water.

As presently exposed, the Telluride Bay copper occurrence consists of a shoreline outcrop of quartz porphyritic, felsic schist. A shallow trench blasted into the outcrop exposes sparse stringers of pyrite and chalcopyrite localized along a 068°/90° fracture cleavage. Traces of sphalerite are present. Three samples of the rock were collected; 2 were mineralized and analyzed for metal content, the third sample was not mineralized and was sent for whole rock and trace element analysis. The assay results are presented in Table 15.

If the quartz-porphyritic felsic schist is of volcanic or subvolcanic origin, whole rock analysis data suggests that the rock is a sodium-depleted rhyolite that straddles the boundary between calc-alkalic and tholeiitic composition (Jensen Cation Plot). The trace element data is not definitive as to whether or not the rock has an ore-associated (FII, FIIIa or FIIIb) or barren (FI) affinity. The Hf, Yb, Y and Zr values are consistent with barren felsic metavolcanic rocks (FI) while the TiO_2, Rb and Sc values are consistent with FIIIb ore-associated felsic metavolcanic rocks. The Zr/Y ratio indicates FI or FII affinity. Detailed geological mapping, additional sampling and more detailed analysis of the trace element data is needed to gain a better understanding of the petrogenesis of the rock unit. Geochemical alteration, including sodium depletion and possible potassium enrichment and silicification may still make classification of this unit difficult.

The 2 mineralized samples returned values for copper, lead, silver and gold suggestive of a polymetallic hydrothermal system. At the time of writing, a zinc analysis was not available for the analysed samples. A zinc value reported with the trace element data for the unmineralized sample is considered above background.

The region of the Telluride Bay copper occurrence is electromagnetically quiet. This may be due in part to the 1990 Ontario Geological Survey GEOTEM™ survey being flown at a low angle to the apparent strike in this area of the survey. Further investigation of the volcanogenic massive sulphide potential of felsic metavolcanic rocks in the Muskasenda Lake area is warranted.

Table 15. Geochemical analysis on samples from the Telluride Bay Copper Occurrence. (N.D. = not detected.)

Description	Au (oz./ton)	Ag (ppm)	Cu (ppm)	Pb (ppm)
Felsic Volc/ Sericitized quartz porphyry with stringer py 5%, tr cp, sp	N.D.	> 50	11974	N.D.
Felsic Volc/ Sericitized quartz porphyry with stringer py 5%, tr cp, sp	0.08	> 50	10257	118

Oxides	Wt. %	Element	ppm	Element	ppm	Element	Ppm	Element	Ppm
Al_2O_3	14.82	Ba	497.88	Gd	2.10	Rb	112.22	U	0.88
CaO	0.36	Be	1.16	Hf	2.86	Sb	0.30	V	8.64
Fe_2O_3	1.62	Cd	0.26	Ho	0.27	Sc	2.14	W	1.11
K_2O	4.05	Ce	51.20	La	26.24	Sm	2.72	Y	8.76
LOI	2.18	Co	0.53	Li	3.86	Sn	3.35	Yb	0.78
MgO	0.29	Cr	15.68	Lu	0.12	Sr	94.21	Zn	190.98
MnO	0.15	Cs	1.94	Mo	0.52	Ta	0.60	Zr	93.14
Na_2O	0.47	Cu	20.02	Nb	6.30	Tb	0.28	Zr/Y	10.63
P_2O_5	0.05	Dy	1.42	Nd	19.12	Th	4.64		
SiO_2	76.62	Er	0.74	Ni	1.06	Ti	523.94		
TiO_2	0.10	Eu	0.50	Pb	12.10	Tl	0.79		
TOTAL	100.72	Ga	17.53	Pr	5.45	Tm	0.12		

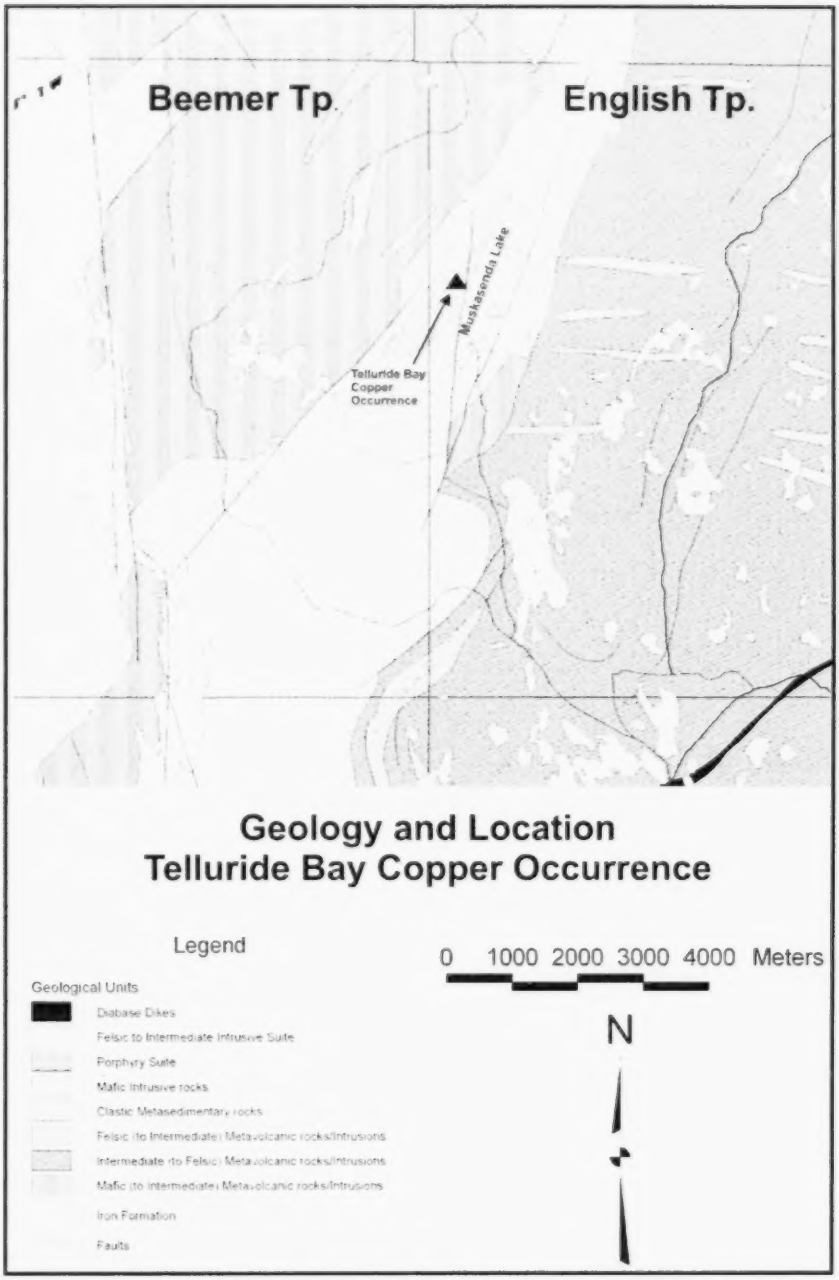

Figure 7. Geology and location map for the Telluride Bay Copper Occurrence

Croxall - De Carle Property, Price Township

J. Croxall and B. De Carle hold a group of 4 claims comprising 16 claim units located in the west-central part of Price Township, west of Grassy River (see Figure 8). The claims cover favourable geology where copper mineralization had previously been identified and prospected. Access to the property is via the Musgrove logging road that connects to Dalton Road leading south from Timmins. The property is situated about 6 km south of the intersection of Musgrove Road and Dalton Road, between Grassy River on the east and Kenogamissi Lake on the west.

Previous Work

Goldale Mines Ltd. held a block of 21 claim units covering much of the area of the present Croxall - De Carle property in 1946. Referred to as the Stibbard Group, the property was subject to an exploration program by Aunor Gold Mines Ltd. that consisted of a magnetic survey, geological mapping and diamond drilling of 3 widely spaced holes totalling 2111 feet. All drill holes were oriented southwest. The drilling encountered banded iron formation that was mineralized with fine-grained pyrrhotite and minor pyrite and chalcopyrite. A single 2 foot sample interval of drill core from the number 2 drill hole assayed 0.08 ounce per ton gold.

In 1966, Acme Gas and Oil Co. Ltd. completed an airborne geophysical survey over parts of Price, Fripp and Thorneloe townships. Airborne coverage included the Croxall - De Carle property. The survey delineated the extent of the iron formation across the property.

Samin Canada Ltd. completed a large airborne magnetic and electromagnetic survey over Price and Fripp townships in 1983. The airborne survey was flown to cover 153 claims comprising the Argentex-Lenora Option, acquired from Lenora Explorations Ltd. (108 claims) and Argentex Resource Exploration Corporation (45 claims). Subsequent to the airborne survey, Samin completed diamond drilling on the Argentex-Lenora Option, southeast of the Croxall - De Carle property. The drilling focused on a zone of zinc mineralization discovered in 1981. Anomalous values of copper, zinc, lead and cobalt were reported in the drilling. Drill logs report the presence of garnet-bearing chert and iron formation.

Blue Emerald Resources held a large block of claims that overlapped the present Croxall - De Carle property in 1997. Magnetic and electromagnetic ground surveys were completed by Blue Emerald on their claims, but no follow-up work was reported.

Geology

The Croxall - De Carle property is underlain by a 1 km wide, northwest-trending band of mafic to intermediate metavolcanic rocks and metasediments bound by granitic rocks of the Adams Pluton to the east and the Kenogamissi Lake batholith to the west. The Mattagami River Fault trends northward along the Grassy River, immediately east of the property.

Roadside outcrops expose a good section of geology through the property on Musgrove Road. From south to north, the property is underlain by amphibolitized intermediate to mafic metavolcanic flows and fragmental rocks. Foliation is strongly developed and trends 065°/60°N. A 2 m thick bed of banded iron formation and chert outcrops alongside the road and in the roadbed. The iron formation exhibits small-scale folding and structural disruption. Interbedded with the iron formation, strongly foliated black graphitic sediment and fine-grained chert occur. In the vicinity of the iron formation, a medium-grained hornblende diorite intrusive rock outcrops. North-trending, coarse-grained diabase dikes intrude the hornblende diorite. Northward across the property, foliation changes abruptly to 140°/50°N. The country rocks have been metamorphosed to amphibolite facies, probably as a result of thermal conditions resulting from the emplacement of the nearby batholithic rocks. Consequently, much epidote is evident in the mafic-intermediate metavolcanic rocks, whereas the banded iron formation exhibits recrystallization of the magnetite and chert and the development of 0.5 cm diameter garnet porphyroblasts. Pyrrhotite is the most common sulphide, but minor pyrite and chalcopyrite were noted in a trench excavated on the iron formation. On the east side of the road, the iron formation is in contact with a 10 m thick, pyrrhotite-bearing, siliceous aphanitic felsic rock. Analytical results for 2 samples collected from the property are presented in Table 16. The rocks contained low values in

copper and zinc and no precious metals. The age relationship between the iron formation and the felsic unit was not evident from the available outcrops.

Table 16. Analytical results from 2 samples collected from the Croxall - De Carle property

Sample Number	Description	Au (oz/ton)	Ag (oz/ton)	Cu (ppm)	Zn (ppm)	UTM Location (Zone 17) NAD 27
2004 BTA 50	sulphide-bearing felsic volcanic	N.D.	N.D.	255	442	4677658 535097[illegible]
2004 BTA 51	sulphide-bearing felsic volcanic	N.D.	N.D.	893	51	4676558 5[illegible]

Whole rock analyses: Major elements as weight % oxide

Sample No:	2004-BTA-50	2004-BTA-51
Oxide	wt%	wt%
Al_2O_3	17.33	11.31
CaO	12.35	1.57
Fe_2O_3	10.55	12.8
K_2O	0.52	0.72
LOI	1.37	4.65
MgO	2.98	2.28
MnO	0.21	0.07
Na_2O	3.25	2.93
P_2O_5	0.09	0.09
SiO_2	49.52	64
TiO_2	1.05	0.5
Total	99.23	100.91

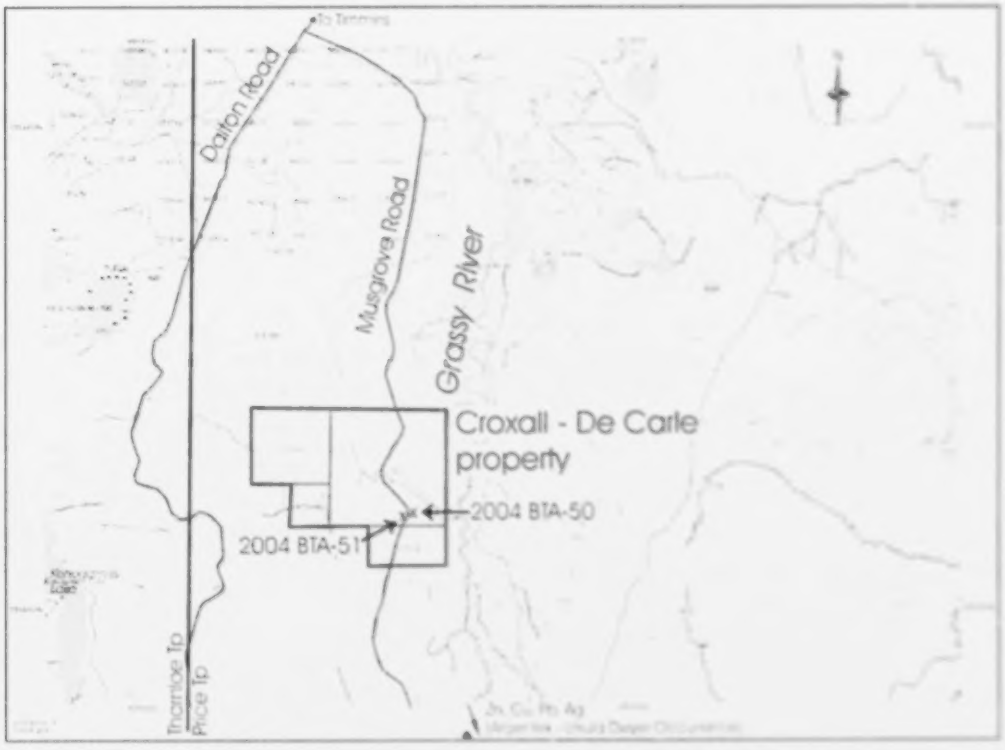

Figure 8. Location map and sample location sites of the Croxall - De Carle property, Price Township

Discussion

Subtle airborne conductors trend north-northwest across the area through Price and Fripp townships. The sulphide occurrences on the Croxall - De Carle property appear to be at the same stratigraphic level as those on the Argentex - Lenora Option property. On the Ursula Dwyer occurrence located to the southeast of the Croxall - De Carle property, iron formation contains sphalerite, galena and chalcopyrite. Although disrupted and discontinuous as a result of structural complexity imposed on the area by the emplacement of the nearby granitic batholiths and subsequent major faulting, i.e., Mattagami River fault, the iron formation represents a major stratigraphic marker in the area that may have base metal mineralization associated with it. Any felsic rocks encountered along the stratigraphic horizon in Price and Fripp townships warrant further exploration attention for base metal mineralization.

Porphyry Zone - Iron Lake Deformation Zone, Michipicoten Greenstone Belt

New logging roads branching off of the Eagle River gold mine access road have improved access to the western end of the Michipicoten greenstone belt. Access to this area has historically been extremely difficult, resulting in limited exploration activity. The property lies within one of the townships held by McDonald Investment Company Inc. and managed by SFT Canada Inc.

The Porphyry Zone is one of many gold occurrences hosted by the Iron Lake Deformation Zone (ILDZ) that traverses the extreme western end of the Michipicoten greenstone belt. The ILDZ was mapped by Reilly (1991) and consists of a series of local shear zones and a broad zone of strike-slip movement that trends 70° through Iron Lake to the eastern boundary of Keating Township, a distance of approximately 8 km. Mapping by Sage (1993) suggests that the ILDZ continues eastward into Killins Township, where it turns slightly to the northeast to run parallel to Heart Lake and terminates against the Kabenung Stock. Observations suggest that the ILDZ also splays towards the west, into the Abbie Lake area, although there has been no recent mapping to confirm this.

The ILDZ lies at the contact between a south-facing sequence of mafic metavolcanic rocks and clastic metasedimentary rocks that form the dominant lithology in the southern part of the township. This contact also hosts the Iron Lake iron formation that is dominated by thinly bedded magnetite and chert. Gabbro, diorite, quartz diorite and quartz ± feldspar porphyry intrusive rocks are found within mafic metavolcanic rocks near the centre of the ILDZ.

The Porphyry Zone was discovered in the early 1980s by International Corona Resources Ltd., who held an exploration option on Keating Township. International Corona and Corona Corporation intermittently explored the site up until 1989-90 when they conducted a summer exploration program of geological mapping, channel sampling, mechanical stripping and a 6 hole (732 m) diamond drilling program (Pryslak 1990). Grab samples from the quartz veins regularly returned assay values up to 2097 ppb Au and a single grab sample from the porphyry assayed 24.5 g/t gold. A 2.8 m section of drill core from drill hole KE-89-2 assayed 3.8 g/t gold.

Massive to pillowed mafic metavolcanic rocks are observed on the north side of the showing. The rocks are dark green, chloritic, have been subjected to ankeritic alteration and are increasingly schistose towards the centre of the deformation zone. Metasedimentary rocks (wackes and conglomerate) interbedded with narrow units of chert± pyrite±magnetite outcrop to the south. The metasedimentary rocks are strongly sheared and chloritized.

Within the deformation zone, a 200 m wide quartz diorite sill is observed along the north side of the showing, immediately adjacent to the porphyry. Shearing of this unit has produced a quartz-sericite schist approximately 50 m north of the porphyry. A late-stage gabbro intrudes the quartz diorite.

The felsic unit hosting the mineralization ranges in composition from quartz± feldspar porphyry to granodiorite. The unit displays pervasive ankerite and potassium feldspar alteration.

Stripping has exposed the showing over a strike length of approximately 300 m and a width of 10 to 15 m. Mineralization is associated with ladder-type quartz-carbonate veins hosted within a quartz porphyry. These veins are prominent on the footwall side of the porphyry. The dominant trend of the veins is 020° to 045°. A less prevalent set of 070° and 110° vein sets are more commonly observed in the hanging wall (south) side. The veins range in thickness from 1 mm to 25 cm. Pyrite is the most commonly observed sulphide, although minor chalcopyrite also is observed. Minor tourmaline also is a constituent of the veins. Visible gold is common in many of the veins.

The Porphyry Zone displays kinematic similarities with the Gerdes, Tibodeau and Charbonneau Property located approximately 10 km to the west in Keating Additional Township. A description of this property can be found in the 1998 Report of Activities for the Timmins region (Atkinson et al. 1999). It is suggested that the Iron Lake Deformation Zone represents a significant gold-bearing structure that has the potential to host economic gold deposits.

Attawapiskat Kimberlites

Since the original discovery of the Attawapiskat kimberlites by De Beers Canada Inc. in 1984, and subsequent discoveries of satellite kimberlites by several junior companies and partnerships, much work has been done to delineate, identify and characterize the nature of the kimberlites and the distribution of diamonds within them. The bulk of the work to date has been completed by De Beers who are working toward bringing the Victor kimberlite, the largest Attawapiskat kimberlite pipe yet discovered, to production. Coincident with those efforts, De Beers has done much in the way of geological, petrographic, geochemical and geophysical studies to characterize many of the Attawapiskat kimberlites (*see* Webb 2003, and references therein). Data on the geochemistry of the Attawapiskat kimberlites is available in Sage (2000).

Preliminary work on select Attawapiskat kimberlites included the modeling of the diamond content of the pipes using microdiamond analyses from small samples obtained from drill core. Table 17 presents the comparison of the microdiamond model grade with the results determined from mini bulk samples for 7 kimberlite pipes. Even though the mini bulk sample results are only a first attempt at determining the diamond grade of the pipes, it is apparent those results contrast significantly from the predicted model grade derived from microdiamond analyses. Obviously, caution must be used in attempting to evaluate the diamond grade of a kimberlite pipe based solely on microdiamond analyses.

Table 17. Comparison of diamond grades based on microdiamond modeling versus actual grades obtained from mini bulk sampling on select Attawapiskat kimberlites.

Kimberlite pipe	Size (Hectares)	Microdiamond model grade (cpht)+	Mini bulk sample results (cpht)+	Correlation
Alpha	7.5	<1	1.8	Low
Alpha North	3.7	10	0	Low
Delta	6.4	5	5.1	High
Tango	4.6	<1	0	High
Tango Extension	4.6	<1	24.5	Low
Victor*	17.0	10	22.3	Moderate
Whiskey	2.7	15	0.47	Low

* *results from Victor Project 8900 tonne bulk sample*

\+ *carats per hundred tonne*

Information compiled from assessment file data provided by De Beers Canada Inc.

Evidence for Structural Control on the Emplacement of the Attawapiskat Kimberlites, James Bay Lowlands

Emplacement of the Jurassic-aged kimberlites in the Attawapiskat area followed preferred orientations as evidenced by individual pipe morphology (Figure 9), the regional alignment of the kimberlite pipes, and the colinearity of specific pipes as depicted in Figure 12. From stratigraphic and paleoenvironment studies of the Attawapiskat River area, Suchy (1992) and Suchy and Stearn (1993) identified several conjugate fault sets that affected the growth of coral reefs in the Silurian-aged Attawapiskat Formation. Their work indicated the faults were active from Proterozoic time to the present. As a result of crustal adjustments and individual fault block motions, depicted in Figure 10, Silurian ocean depths were either conducive or restrictive to coral reef development. Subsequent isostatic adjustments of the fault blocks are responsible for the present-day outcrop distribution of the reefal rocks along the Attawapiskat River. The fault blocks exert pronounced control on the present-day river channel as well. The Attawapiskat River flows eastward but abrupt inflexions in its course occur where it crosses the faults. Of note, the same faults that influenced Silurian reef development and the present-day Attawapiskat River channel also coincide with the emplacement of the Attawapiskat kimberlites. Figure 13 superimposes the Attawapiskat kimberlites on the fault blocks. Lines of 'best fit' for the Attawapiskat kimberlites correspond to 035° and 325° trends as shown in Figure 12. The best fit lines are coincident with the conjugate fault sets that Suchy and Stearn (1993) identified as part of the continental-scale structural event that affected the Paleozoic rocks of the James Bay Lowlands. It is suggested that the conjugate faults that control the Attawapiskat Formation outcrop distribution also controlled the emplacement of the Jurassic-aged Attawapiskat kimberlites through the Paleozoic rocks and their ultimate surface eruption. The implications for exploration for additional kimberlite then, are to explore along the conjugate fault sets, outwards from, and between known kimberlite pipes.

Figure 9 indicates the size and shape of individual pipes determined from diamond drilling and magnetic surveys. The diamond grade for each pipe was determined from mini bulk samples recovered by large-diameter drilling. The samples varied from 10 to 20 tonnes of kimberlite for each pipe sampled. The pipes exhibit elongation in either a northwest (325°) or a northeast (030°) orientation. This preferred orientation is particularly pronounced for the Alpha North pipe, which is colinear with Delta pipe and India pipe. Similarly, Tango pipe, Tango Extension pipe and Whiskey pipe exhibit elongation in the 325° orientation. Victor pipe, shown in Figure 11, exhibits attributes of both orientations, suggesting its emplacement may have occurred at the intersection of two major fault systems, which, in turn, may account for its larger size of 16 hectares and its internal complexity as noted by Webb (2003).

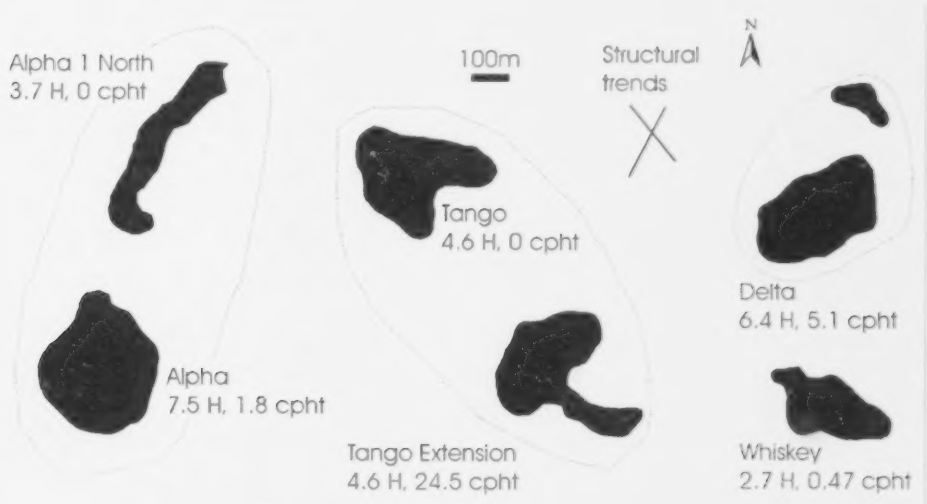

Figure 9. Size, shape and grade of selected Attawapiskat kimberlites. (Data compiled from assessment files submitted by De Beers Canada Inc. Abbreviations: H = hectares; cpht = carats per hundred tonnes.)

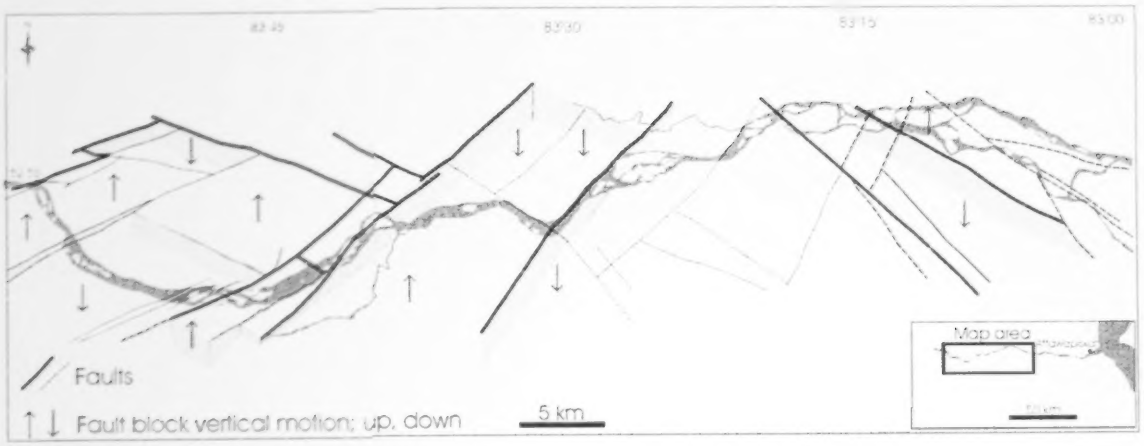

Figure 10. Fault blocks along the Attawapiskat River showing relative vertical motions in the Attawapiskat Formation, *adapted from* Suchy and Stearn (1993).

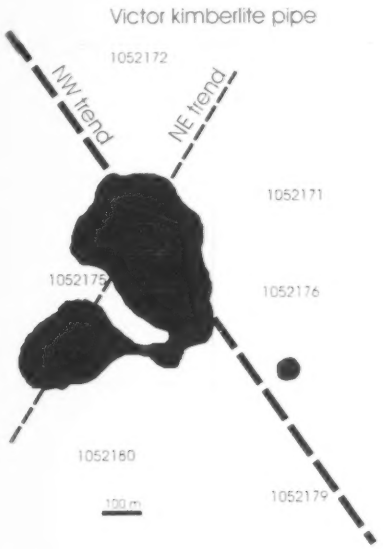

Figure 11. Detail of the 40 m level plan view of the Victor kimberlite pipe, with northeast and northwest structural trends. *Modified from* De Beers Canada Inc. Numbers refer to claim numbers covering the Victor kimberlite pipe.

Figure 12 illustrates a plan view of the distribution of Attawapiskat kimberlites with 'best fit' lines that coincide with crustal-scale fractures of the Paleozoic host rocks. Kimberlites are in their respective positions, but pipe sizes are enlarged to show detail. Note elongation of individual pipes, for example, Alpha and Alpha North in an 030° trend, whereas, in contrast, Tango and Tango Extension show a preferred orientation and elongation in the 325° direction. Pipe shape detail and locations are compiled from assessment file information by De Beers Canada Inc.

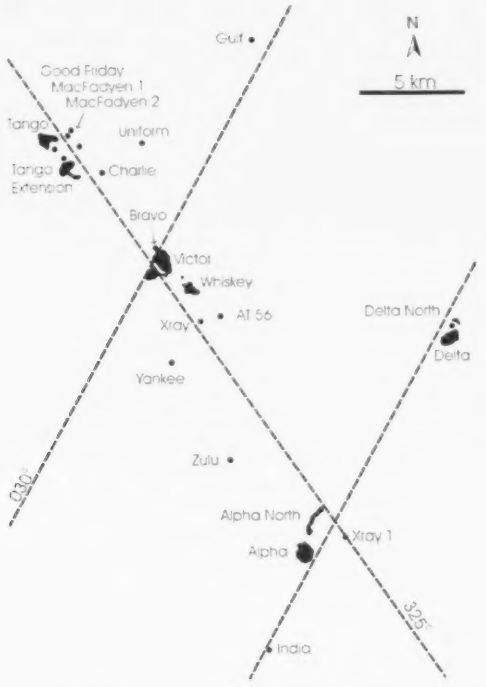

Figure 12. Plan view of the distribution of known Attawapiskat kimberlites.

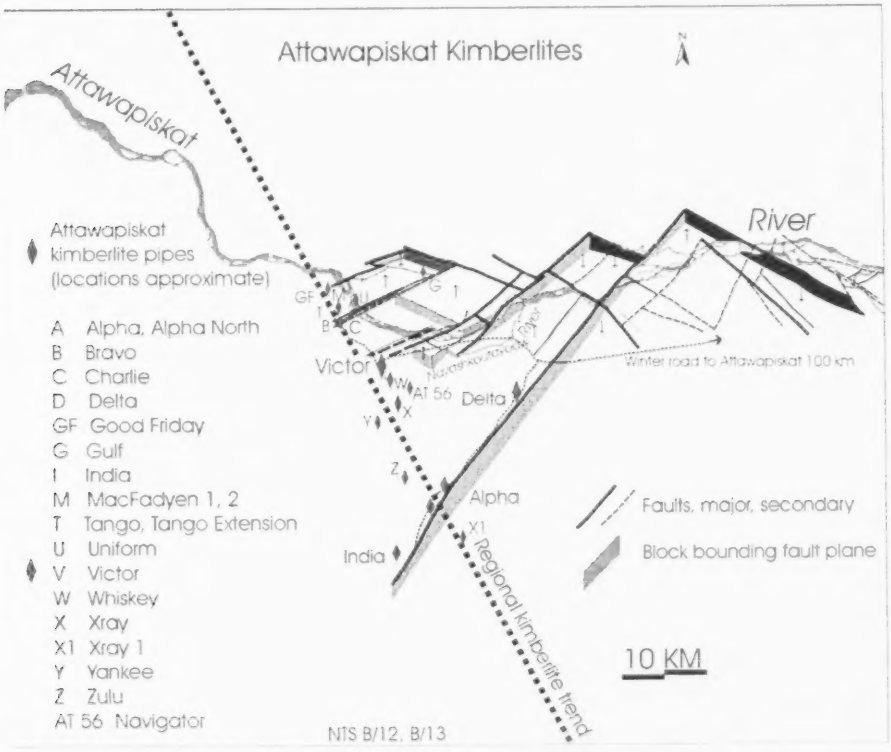

Figure 13. Spatial relationship of kimberlite pipes along fault block boundaries in the Attawapiskat River area. Kimberlite magmas have exploited pre-existing fault blocks in the Paleozoic sediments to achieve surface eruption. Fault blocks *adapted from* Suchy and Stearn (1993).

RECOMMENDATIONS FOR EXPLORATION

Diamonds

In the Attawapiskat area, De Beers Canada Inc. is working towards developing Ontario's first diamond mine on the Victor kimberlite pipe. Other companies are actively exploring and discovering additional diamond-bearing kimberlite in the area. The apparent structural control on the emplacement of the kimberlites (*see* "Evidence for Structural Control on the Emplacement of the Attawapiskat Kimberlites") can be used to guide exploration for additional kimberlite. Specifically, the northwest regional trend of the Attawapiskat kimberlites appears favourable for the discovery of new kimberlite fields, whereas the northeast trend within the Attawapiskat appears favourable for discovery of additional local Attawapiskat kimberlites between and near to previously identified kimberlites.

Gold in the Cradle Lake Deformation Zone

The Goudreau-Lochalsh area, northwest of the town of Wawa, has been an exploration target for gold since the early 1900s. Five past-producing gold mines lie within a 25 km long, arcuate deformation zone (Goudreau Lake Deformation Zone) that stretches from Abotossaway Township in the west to Jacobson Township in the east. The most productive location of the deformation zone was the Cline-Edwards shear that hosted 2 past-producing mines, the Edwards and the Cline mines. The Edwards Mine produced 140 743 ounces of gold from approximately 390 846 tons (average grade 11.2 g/t gold) mostly over the 1997-2002 time span. The adjacent Cline Lake gold mine produced 63 328 ounces of gold from 331 842 tons milled (average grade 0.19 ounce per ton gold) from 1938-40 and 1947-48. Total gold production from the Goudreau Lake Deformation Zone (GLDZ) is estimated to be 357 427 ounces of gold from 1.9 million tons milled. Current exploration targets within the GLDZ include the Island Gold Project (Richmont Mines Inc. and Patricia Mining Corp.), the Plowman Claim property (Strike Minerals Inc.) and the Murphy Mine (Holmer Gold Mines Limited).

Southeast of the GLDZ is a second, less well defined, roughly parallel deformation zone termed the Cradle Lake Deformation Zone (CLDZ). The CLDZ is approximately 5 km long and 1-2 km wide, but may by up to several tens of kilometres in length. The deformation zone lies mostly within feldspar-crystal tuffs that are often difficult to distinguish from the Cradle Lake stock, which is a feldspar porphyry intrusion lying partially within the CLDZ (Heather and Arias 1992). One of the main differences between the GLDZ and CLDZ is the level of exploration. Access to the CLDZ has traditionally been difficult. Recent logging activity in the last few years has vastly improved access to the CLDZ.

Although the CLDZ displays a more ductile style of deformation than the GLDZ, there are nevertheless strong similarities between the two. Significant gold mineralization is found within quartz veins, siliceous zones and sulphidized schists within discrete brittle-ductile high strain zones (e.g., Macleod Occurrence). There is strong alteration, generally in the form of Fe-carbonatization and sericitization associated with these high-strain zones (e.g., Blowout Occurrence). There is a spatial relationship between gold occurrences and felsic intrusions. In the case of the CLDZ, the Cradle Lake porphyry stock has been compared to the GLDZ equivalents of the Gutcher Lake stock (Ego Mine Prospect and the Murphy Mine), the Webb Lake Stock (Magino gold mine) and the Cline Lake felsic dike complex (Cline Lake Mine) (Heather and Arias 1992).

The MacLeod Occurrence lies on the north margin of the Cradle Lake porphyry and consists of at least 2 shallow-dipping, parallel quartz veins within the porphyry. Channel samples collected in 1938 from the MacLeod Occurrence by Hollinger Gold Mines Limited returned assays of 1.34 ounce per ton gold over 22 inches. Two, 20-kg samples collected from the property in 1998 assayed 9.65 g/t gold. The Jackfish Lake occurrence comprises a rusty quartz vein within a mafic schist near the northern limit of the CLDZ. A grab sample collected from the vein in 1926 returned an assay of $10.50 gold (gold at $20.63 per ounce) and grab samples collected from a quartz-carbonate zone in the same area in 1988 returned an assay of 0.038 ounces per ton gold.

It is also interesting to note that in the GLDZ, there is also an apparent spatial relationship between gold occurrences and the margins of regionally extensive mafic to intermediate sills and dikes. The CLDZ encompasses several of these regional sills. Several recent gold discoveries, namely the Rock Star Occurrence and the Tracanelli

Occurrence, have been discovered adjacent to mafic sills in what is presumed to be the westward extension of the CLDZ.

James Bay Lowlands and Hudson Bay Lowlands

The Phanerozoic rocks of the Hudson Bay-James Bay Lowlands are iron deficient and, as such, are relatively transparent to geophysical surveys. Airborne magnetic and electromagnetic surveys are able to "see through" the sediments to the underlying Archean basement rocks. Elsewhere in Ontario, where Archean greenstone belts are exposed on surface, a wide variety of mineral deposits have been discovered, developed and mined. In particular, the Uchi Subprovince is host to major gold deposits at Red Lake and Pickle Lake, volcanic-hosted massive sulphide mineralization at South Bay, and nickel-copper mineralization at Pickle Lake. Regional airborne geophysical surveys reveal the probable eastward continuation of the Uchi Subprovince beneath Phanerozoic cover rocks in the vicinity of Martin Falls and Ogoki. Similarily, greenstone belts of the Sachigo Subprovince extend eastward beneath Phanerozoic cover rocks at McFaulds Lake, where Spider Resources Inc. and KWG Resources Inc. have been successfully delineating volcanic-hosted massive sulphide (VHMS) mineralization by diamond drilling geophysical targets. The cover rocks range in thickness from 0 to 10 m in the vicinity of McFaulds Lake to about 275 m at the Victor diamond project, located 90 km west of Attawapiskat. The westward thinning of the Phanerozoic sedimentary rocks of the Hudson Bay and James Bay lowlands enhances the magnetic transparency of the rocks, thereby making buried Archean greenstone belts and their mineral deposits more visible to geophysical techniques. This frontier presents a vast area in which to explore for a wide variety of mineral deposits, including diamonds in kimberlite, mafic-hosted nickel, copper and platinum group metals, VHMS copper-zinc-silver and Archean lode gold deposits. Recent advances in the penetration capabilities of modern geophysical surveys effectively open up the entire Hudson Bay - James Bay lowlands to new mineral discovery.

OGS ACTIVITIES AND RESEARCH BY OTHERS

A number of mapping and research projects were underway or completed in the Timmins District and are listed below. Details of some of the projects are reported in Baker et al. (2003).

M. DeWolfe, Laurentian University, Sudbury, continued MSc research on the stratigraphic and structural setting of the north rhyolite at the Kidd Creek mine in Kidd Township.

E. Dinel, University of Ottawa, continued PhD research on the geology and geochemistry of the gold-bearing volcanic rocks at the Hoyle Pond Mine in Timmins.

B. Hathway commenced a 2-year mapping program to determine geological, structural and stratigraphic controls on volcanogenic mineralization in the Kamiskotia area.

M.G. Houlé, Precambrian Geoscience Section, Ontario Geological Survey, completed 1:20 000 scale geological mapping of Carmen and Langmuir townships.

S. Hocker, University of Wisconsin, Oshkosh, Wisconsin, USA, continued geological mapping and MSc research on the Genex volcanic-hosted massive sulphide deposit in Godfrey Township.

P. MacDonald, Laurentian University, Sudbury, continued MSc research on the role of porphyry intrusions in gold mineralization in Timmins.

P. Thompson completed a metamorphic study of the Discover Abitibi Initiative area using existing rock thin sections from government survey collections and exploration and mining company sources.

C. Vaillancourt, Precambrian Geoscience Section, Ontario Geological Survey, continued her investigation into the unusual diamond-bearing rocks in the Wawa area. Mapping of Menzies Township was completed. Mapping of the southwest portion of Musquash Township and reconnaissance mapping of portions of Lalibert and Leclaire townships began in 2004 and is ongoing.

G. Washington, Wayne State University, Detroit, Michigan, USA, commenced MSc research, lithogeochemical alteration studies and mine tailings evaluation at the McIntyre Mine.

DISCOVER ABITIBI INITIATIVE

The Discover Abitibi Initiative is a collaborative geoscience program co-funded by municipal, provincial and federal governments and by the private sector, including mining and exploration companies and support service companies.

Towards the objective of furthering the geoscience knowledge of the western part of the Abitibi Subprovince in the Timmins - Black River - Matheson - Kirkland Lake area, a number of geoscience projects are underway or have recently been completed. Summaries of projects completed to date are described in Baker et al. (2004).

During the year, work contracted to Discover Abitibi Initiative included 2-dimensional seismic surveys along area roads crossing the Porcupine–Destor Fault and major lithotectonic boundaries. Seismic surveys were also completed in the Matheson-Black River and Kirkland Lake areas. In all, seismic surveys included 140 line km with an additional 55 km of high resolution seismic surveys completed over select geological features. Results of the seismic survey were not available at time of writing.

The Abitibi Greenstone Architecture Project involved site-specific geological mapping, and metallogenic research in the Kamiskotia and Timmins area. In the Kamiskotia area, research emphasis focused on base metal metallogeny and volcanic stratigraphy, while in Timmins, research efforts were directed towards understanding the structure, alteration, metamorphism, timing, and origins of the major gold deposits (*see* descriptions of Discover Abitibi Initiative projects 37 to 46 in Baker et al. (2004)).

ACKNOWLEDGEMENTS

Information on past activities reported in the text are from assessment files and other files of the Timmins Resident Geologist office unless otherwise noted. Information on current mining and exploration activities was provided by individual prospectors and exploration and mining company personnel, compiled from assessment files and obtained from public information sources.

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Table 18. Assessment files received in the Timmins District in 2004.

Abbreviations

AEM	Airborne electromagnetic survey
AM	Airborne magnetic survey
ARes	Airborne resistivity survey
AVLF-EM	Airborne very low frequency EM survey
AVTEM	Airborne VersaTEM survey
Bulk	Bulk sampling
Comp	Data compilation
DD	Diamond drilling-no. of holes-total length
EM	Electromagnetic
GC	Geochemical survey
GEM	Ground electromagnetic survey
GL	Geological Survey
GM	Ground magnetic survey
Grav	Gravity survey
GT	Geotechnical survey
HLEM	Horizontal loop electromagnetic survey
HM	Heavy mineral sampling
Interp	Interpretation
IP	Induced polarization survey
Lc	Linecutting
MMI	Mobile Metal Ion™ Survey
MP	Electron microprobe analysis
Multi	Multi element analysis
OD	Overburden drilling-no. of holes-total length
PEM	Pulse electromagnetic survey
Pet	Petrographic study
Pr	Prospecting
QemSCAN	Quantitative evaluation of materials by Scanning Electron Microscopy
Res	Resistivity survey
Samp	Sampling (other than bulk)
Ssed	Stream sediment sampling
Str	Stripping
TDEM	Time domain electromagnetic survey
TEM	Transient electromagnetic survey
Tr	Trenching
UTEM	University of Toronto EM survey
VLF-EM	Very low frequency electromagnetic survey
WRA	Whole rock analysis

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Abbie Lake Area	Michano, Gionet, Carson & Moses	2004	Pr, Tr, Samp, Assay, GC, GL	2.28116	WP Abbie Lake-25
Abotossaway	Ego Mines Limited	1959	DD-8	Donation	WP Abotossaway-40
Abotossaway	Patricia Mining Corp.	2004	Pr, Samp	2.27805	WP Abotossaway-41
Abotossaway	Algoma Central Railway	1953	GL	Donation	WP Abotossaway-42
Adams, Deloro, Eldorado	Mustang Minerals Corp.	2004	AM, AEM	2.28796	T-5057
Aguonie	Algoma Ore Properties, Limited	1959	GL, GM	Donation	WP Aguonie-13
Aguonie, Cowie	Metcalf, H.S.K.	1953	GL	Donation	WP Aguonie-14
Bailloquet	3014793 Canada Inc.	2004	GL, GM	2.27662	WP Bailloquet-11
Bartlett	Outokumpu Mines Inc.	1995	HLEM, GM	Donation	T-4961
Bartlett, Geikie	Outokumpu Mines Inc.	1995	Samp, GC	Donation	T-4960
Bartlett, Geikie	Pele Mountain Resources Inc.	2004	DD-4 – 977 m, Samp, Assay	2.27499	T-4984
Benton, Heenan	Lashbrook, R.L.	2004	Lc, VLF-EM	2.28290	T-5024
BMA 513 814 (Fulton River)	Superior Diamond Prospecting Syndicate	2004	AM	2.28148	T-5042
BMA 524 862, BMA 523 862, BMA 523 861, BMA 524 861	Northern Shield Resources Inc.	2003	SSed, HM, MMI, AM, IP, GM	2.26473	T-5002
BMA 525 832	1387197 Ontario Inc.	2003	Tr, Samp	2.26636	T-4948
BMA 526 834	Big Red Diamond Corporation	2004	Auger-16 – 255 m, Samp, HM, MP	2.27131	T-4988
BMA 526 834, BMA 527 834	Dumont Nickel Inc.	2003	OD-108, Samp, WRA, HM	2.27362	T-4971

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
BMA 527 833	Canabrava Diamond Corporation	2001	DD-1 – 317.5 m	2.26859	T-4941
BMA 527 833	Kel-Ex Development Ltd.	2003	DD-1 – 314 m, Magnetic Susceptibility	2.28698	T-5050
BMA 527 834	Canabrava Diamond Corporation	2003	Report, Other (Geophysical Modeling)	2.26860	T-4942
BMA 527 834	De Beers Canada Exploration Inc.	2003	Grav	2.26764	T-4946
BMA 527 834	De Beers Canada Exploration Inc.	2003	GL, DD-93 – 6352 m, GT, Pet	2.26722	T-4954
BMA 527 861	Candor Ventures Corp. and Geocanex Ltd.	2003	Lc, TDEM	2.28231	T-5036
BMAs 527 861; 527 854, 526 861	Spider Resources Inc.	2003 - 2004	DD-41 – 9256.5 m, Samp, Assay	2.28659	T-5059
BMA 528 834	Waseco Resources Inc.	2004	Lc, GM	2.28271	T-5023
BMAs 526 834, 527 834, 528 834, 528 841, 531 841	Strongbow Exploration Inc.	2004	AEM, ARes, AM	2.28005	T-5009
Boyle, McKnight	Northern Shield Resources Inc.	2003	GM, DD-1 – 165 m	2.26404	T-4944
Breckenridge, Lizar, Nameigos, Mosambik	Teck Cominco Limited	2003	GL, Samp, Assay, Multi, MMI, UTEM	2.27988	WT Lizar-28
Bristol	Probe Mines Limited	2004	GM, IP	2.28376	T-5038
Bristol	Explorers Alliance Corporation	2004	DD-1 – 250 m, Samp	2.28870	T-5065
Brower	Haire, P.G.	2003	OD-2 – 39.55 m, Assays	2.26777	T-4943
Byers	Lalonde, D.J.	2004	Lc, GM	2.27153	T-4974
Byers	Lalonde, D.J.	2004	HLEM	2.27330	T-4977
Camp Lake Area	The Algoma Steel Corporation, Limited	1960	GL	Donation	WP Camp Lake-12
Camp Lake Area	The Algoma Steel Corporation, Limited	1982	GM, GEM, VLF-EM	Donation	WP Camp Lake-11
Carnegie	Falconbridge Limited	2003	GM, HLEM	2.27569	T-4979
Carscallen	Falconbridge Limited	2004	DD-1 – 233 m, Samp, Assay, WRA	2.28864	T-5062
Carscallen	Falconbridge Limited	2004	HLEM, GM	2.28872	T-5064
Carscallen, Whitesides	Falconbridge Limited	2004	GM, HLEM	2.28390	T-5029
Casselman	Hinzer, J.B., Dirks, P.P. and Dirks, P.J.	2003	Tr, Samp, HM	2.27737	T-4990
Chabanel	3814793 Canada Inc.	2004	VLF-EM	2.27209	WP Chabanel-70
Chabanel	Huttert, H.P.	2004	Lc, Pr, GL, Samp, Assay	2.28551	WP Chabanel-72
Chabanel, Esquega, Lastheels, Lendrum, McMurray	3814793 Canada Inc.	2004	VLF-EM, GM, GL, Bulk, HM, DD-4 – 294 m, Samp, Assay, WRA	2.28174	WP Chabanel-71
Chester	Young-Shannon Gold Mines, Limited	2004	DD-5 – 4270 ft., Assay	2.28188	T-5021
Cody	Raine, B.N.	2004	Samp, Assay	2.28125	T-5016
Corbiere	Band-Ore Resources Ltd.	2003	GL, GC, Pr, Samp, Assay	2.27334	WP Corbiere-25
David Lake Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM	Donation	WP David Lake-48
David Lake Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM	Donation	WP David Lake-49
David Lake Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM, GM	Donation	WP David Lake-50
David Lake Area, Camp Lake Area	Messina Minerals Inc.	2003	Pr	2.27075	WP David Lake Area - 47
Deloro	Ontex Resources Limited	2003 - 2004	GL, Assay	2.26984	T-4955
Deloro	Ontex Resources Limited	2003	DD-8-1066 m, Assay	2.27226	T-4963
Deloro	Ontex Resources Limited	2002 - 2003	Lc, Comp, GM, VLF-EM, IP, HLEM	2.26871	T-4966
Deloro	Globex Mining Enterprises Inc.	2004	QemSCAN, WRA, Multi	2.27558	T-5008
Denton	Explorers Alliance Corporation	2004	DD-1-30 m	2.27591	T-4986

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Dundonald	Liberty Mineral Exploration Inc.	2004	Lc, HLEM	2.27455	T-5034
Dundonald, German	Meunier, D.	2002	GC, MMI (lake bottom)	2.28677	T-5087
Edith, Cavell, Carew, Joffre	Wallbridge Mining Company Ltd.	2004	AVTEM	2.28525	T-5032
Ermine	Algoma Ore Properties Ltd.	1960	GM, GEM	Donation	WT Ermine-6
Finan	Kremzar Property	1933	Str, Assays, Tr	Donation	WP Finan-76
Finan	Patricia Mining Corp.	2004	DD-1 – 839 m	2.27618	WP Finan-77
German, Dundonald	Meunier, D.	2004	GL, Samp, Assay	2.28699	T-5051
German, Stock	St. Andrew Goldfields Ltd.	2004	DD-4 – 2059 m, Samp, Assay	2.27857	T-5020
Glasgow, Meath, Rennie	Algoma Steel Corporation	1958	Lc	Donation	WP Meath-16
Godfrey	6070205 Canada Inc.	2004	GM	2.27829	T-4999
Godfrey	Seagreen Capital - Explorers Alliance Corporation	2004	DD-2-453 m, Samp	2.28518	T-5039
Godfrey	Falconbridge Limited	2004	GM, HLEM	2.28867	T-5063
Hambleton, Odlum	Corona Gold Corporation	2004	DD-26-7100 m, Samp, Assay	2.28384	WP Hambleton-18
Hawkins	McKinnon, D.	2004	Str	2.27799	WT Hawkins-34
Homer	The Algoma Steel Corporation, Limited	1960 1982	GM, VLF-EM, GL	Donation	WP Homer-6
Homer	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM, GEM	Donation	WP Homer-5
Horwood	Durham, R.B.	2003	Pr, Samp, Assay	2.27884	T-5005
Horwood	JML Resources Limited	2004	Lc, GM	2.28683	T-5046
Hurdman	Don Mc Holdings	2004	Lc, GM	2.28730	T-5052
Hutt	Claim Lake Resources Inc.	2004	Lc, GM	2.27119	T-4959
Hutt, Zavitz	Claim Lake Resources Inc.	2004	Lc, GM	2.27456	T-4981
Ireland	Northern Shield Resources Inc.	2003	GM, OD-1 – 12 m, Pet	2.26403	T-4949
Ivanhoe	Morin, R.J.	2002	Pr, Str, Samp, Assay	2.28434	T-5031
Jacobson	Vencan Gold Corporation	2002	DD-7 – 3624 ft., Samp, Assay	2.28517	WP Jacobson-83
Jessop	Queenston Mining Inc.	2004	DD-1 – 493 m, Samp, Assay	2.28889	T-5068
Jessop, Murphy	Kennecott Canada Exploration Inc.	2003	AVTEM, AM	2.26639	T-4965
Jessop, Murphy	Queenston Mining Inc.	2004	TEM, IP, Res	2.28103	T-5014
Keefer	Galata, F.	2002	DD-4 – 500 m, Assay	2.27051	T-4952
Kenogaming, Penhorwood, Reeves, Sewell	Canadian Golden Dragon Resources Ltd.	2004	GM, VLF-EM	2.27467	T-4976
Kidd	Falconbridge Limited	2002	DD-2 – 1273 m	2.28637	T-5044
Knicely	The Algoma Steel Corporation, Limited	1953 1954 1995	GL, DD, Samp, Assay, Conc. Tests	Donation	WP Knicely-2
Lalibert, Dambrossio	Seven Islands Mining & Exploration	1953	GM, GL, Pr, DD, Assay, Tr	Donation	WP Lalibert-3
Langmuir	Liberty Mineral Exploration Inc.	2003 - 2004	Lc, GM	2.27329	T-4983
Langmuir	2004428 Ontario Inc.	2004	DD-1 – 229 m	2.27781	T-4995
Langmuir	Salo, R.W.	2004	GM	2.28412	T-5030
Langmuir	Liberty Mineral Exploration Inc.	2004	PEM GEM	2.27492	T-5035
Langmuir	Liberty Mineral Exploration Inc.	2004	DD-2 – 439 m	2.28731	T-5053
Langmuir, Eldorado	2004428 Ontario Inc.	2003	AM, AEM, Comp, Interp	2.26599	T-4953
Leclaire	Oasis Diamond Exploration Inc.	2003	Pr, Samp, Diamond analysis	2.26586	WP Leclaire-10
Leclaire	Goodwin, Dr. A.M.	1953	GL	Donation	WP Leclaire-11
Leeson	Robert, J. / Tremblay, M.A.	2004	Pr, Samp, Assay	2.27845	WP Leeson-19
Lendrum	Quetico Exploration & Development Co. Ltd.	2003	GL	2.28640	WP Lendrum-38
Lendrum	The Algoma Steel Corporation, Limited	1979	GM, GL	Donation	WP Lendrum-37

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Lizar, Nameigos, Breckenridge, Mosambik	Teck Cominco Limited	2002	AM, AEM	2.27285	WT Lizar-27
Loveland	Meunier, D.	2004	DD-1 – 143.5 m	2.27117	T-4969
Loveland	Meunier, D.	2004	DD-1 – 335 m, Samp	2.27333	T-4969
Loveland	Moneta Porcupine Mines Inc.	2004	Lc, GM, HLEM, IP	2.27754	T-4991
Loveland	Meunier, D.	2004	DD-1 – 158 m, Samp	2.28152	T-5017
Loveland	Woodruff Capital Management Inc.	2004	Lc, GM	2.28535	T-5033
Loveland	Western Kidd Resources Inc.	2004	DD-1 – 224 m, Samp	2.28583	T-5040
Mahaffy	Falconbridge Limited	2002	DD-1 – 200 m, Samp, Assay, WRA	2.28692	T-5048
Mallard	Morin, R.	2004	Pr, Samp, Assay	2.27730	T-5003
Marion	Gagne, Y.M.	2003	Tr, Samp, Assay	2.27040	T-4951
Massey, Whitesides	Lalonde, D.J.	2004	GM	2.27836	T-5000
Matheson	Porcupine Joint Venture	2003	AM	2.27289	T-4968
McBrien, Sanborn, Kipling	McKinnon, D.	2004	Soil Gas sampling and analysis	2.27446	T-5010
Mishibishu Lake Area	Murgor Resources Inc.	2004	Blazing	2.27728	WP Mishibishu Lake-64
Mishibishu Lake Area	Murgor Resources Inc.	2004	Reprocessing of Res, IP	2.27729	WP Mishibishu Lake-65
Montcalm, Poulett, Belford, Watson	Becker Gold Mines Ltd.	2004	AM, ATEM	2.27576	T-4982
Mountjoy, Jessop	Explorers Alliance Corporation	2004	DD-1 – 234 m	2.27490	T-4978
Murphy	Skeries, R.A.	2003	IP	2.26886	T-4947
Murphy	Moneta Porcupine Mines Inc.	2004	DD-1 – 806 m, Assay	2.27152	T-4956
Nursey	Annett, R.	2004	AM, ATEM	2.27949	T-5007
Ogden	Porcupine Joint Venture	2003	AM	2.27396	T-4970
Ogden	Grant Forest Products Corp.	2004	GL, Str, Lc, GM	2.27351	T-4992
Ogden	Porcupine Joint Venture	2004	DD-1 – 200 m, Samp, Assay	2.7886	T-5006
Ogden	L.B.L. Richgold Mines Incorporated	2004	Pr, Samp, Assay	2.28084	T-5015
Ogden	Porcupine Joint Venture	2004	Res, IP	2.28434	T-5037
Ogden	Lake Shore Gold Corp.	2004	GC, MMI (soil)	2.28625	T-5041
Ogden	Porcupine Joint Venture	2004	DD-1 – 299 m, Samp, Assay	2.28641	T-5045
Ogden, Thorneloe, Price, Bristol	Porcupine Joint Venture	2003	AM	2.27311	T-4967
Osway	Osprey Gold Corp.	2004	DD-1 – 550 ft	2.28305	T-5026
Osway	Osprey Gold Corp.	2004	DD-5 – 2710 ft	2.28886	T-5067
Osway	Osprey Gold Corp.	2004	DD-1 – 300 ft	2.28945	T-5067
Pilot Harbour Area	The Algoma Steel Corporation, Limited	1982	VLF-EM	Donation	WP Pilot Harbour-26
Pilot Harbour Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM	Donation	WP Pilot Harbour-25
Pilot Harbour Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM, GEM	Donation	WP Pilot Harbour-24
Pilot Harbour Area	The Algoma Steel Corporation, Limited	1982	GM, VLF-EM, GEM	Donation	WP Pilot Harbour-23
Pilot Harbour Area	The Algoma Steel Corporation, Limited	1982	VLF-EM	Donation	WP Pilot Harbour-22
Pilot Harbour Area	Thunder Sword Resources Inc.	2004	Pr, Tr, Samp, Assay, Multi	2.27560	WP Pilot Harbour-27
Pilot Harbour Area, Homer	The Algoma Steel Corporation, Limited	1982	GM	Donation	WP Pilot Harbour-28
Point Isacor Area	River Gold Mines Ltd.	2002	DD-55, Samp, Assay	2.27578	WP Point Isacor-21
Price	Kinross Gold Corporation	2003	DD-3 – 984.2 m, Assay	2.26941	T-4950
Rabazo	Clement, C.C.	2003	Pr, Samp, Assay	2.26994	WP Rabazo-44
Rabazo	Bridget Lake Resources Incorporated	2004	AM	2.27302	WP Rabazo-45

Township or Area	Company Name	Year	Type of Work	ASSIS Number	Resident Geologist Office File Designation
Rabazo	Bridget Lake Resources Incorporated	2004	AM, AVLF-EM, Interp	2.28309	WP Rabazo-86
Rabazo	Bridget Lake Resources Incorporated	2004	AM, AVLF-EM, Interp	2.28293	WP Rabazo-87
Rabazo, McMurray, Lendrum, Lastheels, *Nebonaionquet*, Dulhut, Laronde, Peterson, Restoule, Redsky, Naveau, Abotossaway	Geological Survey of Canada	1928 - 1930	GL	Donation	WP Rabazo-80
Reaume, Fournier	Falconbridge Limited	2004	GM, HLEM	2.28263	T-5022
Reeves, Penhorwood	Canadian Golden Dragon Resources Ltd.	2004	Lc, IP	2.28264	T-5025
Reid	Meunier, D.	2004	DD – 1 – 176 m	2.27118	T-4958
Reid	Falconbridge Limited	2003	DD-1 – 291 m, Samp, Assay, WRA	2.27420	T-4972
Reid	Falconbridge Limited	2004	DD-1 – 228 m, Samp, Assay, WRA	2.27837	T-4996
Reid	Falconbridge Limited	2004	DD-1 – 228 m, Samp, Assay, WRA	2.28039	T-5012
Reid	Falconbridge Limited	2000	DD-1 – 225 m, Samp	2.28693	T-5049
Reid, Mahaffy	Falconbridge Limited	2003	DD-10 – 871 m, Samp, Assay, WRA	2.27557	T-4985
Riggs	Algoma Ore Properties, Limited	1958	DD-2 – 855 ft	Donation	WP Riggs-64
Riggs	Tremblay, M.A. and Robert, J.	2004	DD-2 – 94 m	2.28379	WP Riggs-65
Riggs	Gold Insight Resources Ltd.	2004	Pr, Samp, WRA	2.28417	WP Riggs-66
Robb	Explorers Alliance Corporation	2004	DD-11 – 1979 m, Samp, Assay, WRA, Multi	2.27741	T-4997
Robb	Vision Lake Mining Inc	2004	Lc, GM	2.28431	T-5047
Sewell	Durham, B., Ross, G., Windsor, G., Ross, F.	2003	Pr, Tr, Samp, Assays	2.27994	T-5011
Shaw	Cole, B.L.	2004	GM, VLF-EM	2.27237	T-4964
Shaw	Algoma Steel Corporation	1967	GM, Samp, Assay	Donation	T-5001
Shaw	Volcanic Metals Exploration Inc	2004	DD-4 – 656 m, Samp, Assay	2.28855	T-5063
Shaw	Laurion Gold Inc	2004	GL	2.28876	T-5066
Sheraton	Falconbridge Limited	2003	DD-1 – 240 m, Samp, Assay, WRA	2.27710	T-4989
Stock	St. Andrew Goldfields Ltd.	2004	DD-4 – 1317 m, Samp, Assay	2.27458	T-4975
Stock	St. Andrew Goldfields Ltd.	2004	DD-1 – 644 m, Samp, Assay	2.27792	T-5019
Sunday Lake Area	Pelangio Mines Inc	2004	DD-3 – 1118 m, Samp, Assay	2.27767	T-4993
Sunday Lake Area, West of Sunday Lake	Pelangio Mines Inc	2004	DD-5 – 739.8 m, Samp, Assay	2.27387	T-4973
Tisdale	Placer Dome (CLA) Limited	2003	DD-2 – 4983.6 m, Assays	2.26789	T-4945
Tisdale	Kinross Gold Corporation	2003	IP, GM	2.27573	T-4957
Tisdale	Moneta Porcupine Mines Inc	2004	DD-1 – 299 m, Assay	2.27309	T-4962
Tisdale	Caron, M.G.	2004	Lc, HLEM	2.27789	T-4994
Tisdale	Moneta Porcupine Mines Inc	2004	DD-1 – 237 m	2.28598	T-5041
Tisdale	Vedron Gold Inc	2004	DD-1 – 193 m, Samp, Assay	2.28678	T-5054
Turnbull	Eloro Resources Inc.	2004	Tr, Samp	2.28967	T-5080
Turnbull	Falconbridge Limited	2004	DD-2 – 411 m	2.28765	T-5076
Valentine	1387197 Ontario Inc	2003	GM, Lc	2.26849	T-4939
Valentine	1387197 Ontario Inc	2003	AM, AVLF-EM	2.26854	T-4940
Waconsta	McKinnon, D.	2004	Str, Tr	2.28573	T-5058
Wark	Pegg, C.C.	2001	GC (Soil); MMI	2.23460	T-5027
West of Sunday Lake Area	Pelangio Mines Inc	2003	DD-2 – 964.4 m, Samp	2.27528	T-4980

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Whitney	Korba, E.J.	2004	GM	2.27637	T-4987
Whitney	Porcupine Joint Venture	2003	DD-24 – 12 464 ft	2.28452	T-5028
Whitney	Croxall, J.E.	2004	Pr, Samp, Assay	2.28720	T-5055
Zavitz, Hutt	Claim Lake Resources Inc	2004	Lc, VLF-EM	2.28158	T-5018

Table 19. Publications received by the Timmins Regional Resident Geologist's office in 2004

Title	Author	Type and Year of Publication[1]
Report of Activities, 2003, Resident Geologist Program: Timmins and Sault Ste. Marie Districts	Atkinson, B.T., Hailstone, M., Seim, G.Wm., et al.	OGS Open File Report 6130
Geological compilation of the Abitibi greenstone belt	Ayer, J.A., Trowell, N.F. and Josey, S.	2 CDs: OGS Miscellaneous Release – Data 143
Summary of Field Work and Other Activities, 2004	Baker, C.L., Debicki, E.J., Parker, J.R., et al.	OGS Open File Report 6145
Precambrian Geology of WHITNEY and HOYLE TOWNSHIPS	Bateman, R.	OGS Map P.3547 *
Geometric and timing relationships of mineralized structures at the Hollinger gold mine, Timmins, Ontario	Bulman, V.J.M.	MSc Thesis, 1986
Comparison of selective leach signatures over kimberlites and other targets	Burt, A.K. and Hamilton, S.M.	OGS Open File Report 6142 *
Geochemical data for selective leach signatures over kimberlites and other targets	Burt, A.K. and Hamilton, S.M.	CD: OGS Miscellaneous Release – Data 136 *
The geology and mineral deposits of Nighthawk Lake Area	Byers, A.R.	PhD Thesis, 1936
Overview of trends in Canadian mineral exploration, 2003	Canadian Intergovernmental Working Group on the Mineral Industry	Report, 2003
Bedrock Geology, LAKE SUPERIOR, Sudbury, Ontario-USA	Card, K.D, Sanford, B.V. and Davidson, A.	GSC Geological Atlas Mapset NL-16/17-G, 1994
The porphyries and porphyritization in Osway Township, Ontario	Couture, F.T.	MSc Thesis, 1950
Report of Activities, 2003, Resident Geologist Program: Regional Land Use Geologist Report	Debicki, R.L., Drost, A.P., Fraser, R.J., et al.	OGS Open File Report 6133
TECTONOMETAMORPHIC MAP OF ONTARIO	Easton, R.M. and Berman, R.G.	OGS Map P.3533 (GSC Open File 1810)
Surface geology of the Hollinger and McIntyre properties, Timmins	Evans, R.L.	PhD Thesis, 1986
WHITE RIVER Airborne Gamma-ray Spectrometic Survey	Geological Survey of Canada	Geophysical Series Map 35342G, 1982
Entry and work on private property - An explorationist's guide	Harries, K.J.C.	Report, 1997
Precambrian Geology of SHAW TOWNSHIP	Hall, L.A.F., Houle, M.G. and Tremblay, E.	OGS Map P.3541
Precambrian Geology of Parts of GODFREY, TURNBULL, CARSCALLEN and BRISTOL TOWNSHIPS	Hathway, B. and Hocker, S.M.	OGS Map P.3544 *
Precambrian Geology of ELDORADO and ADAMS TOWNSHIPS	Houle, M.G., Hall, L.A.F. and Tremblay, E.	OGS Map P.3542
Geology and metallogeny of the Kluane mafic-ultramafic belt, Yukon Territory - Eastern Wrangellia – A new Ni-Cu-PGE metallogenic terrane	Hulbert, L.J.	GSC Bulletin 506, 1997

Title	Author	Type and Year of Publication[1]
Precambrian Geology of GAUTHIER TOWNSHIP TRANSECT	Ispolatov, V.O. and Lafrance, B.	OGS Map P 3546 *
Report of Activities, 2003, Resident Geologist Program: Red Lake and Kenora Districts	Lichtblau, A., Hinz, P., Ravnaas, C., et al.	OGS Open File Report 6127
Contrasting styles of alteration and metamorphism in shear zones at Wawa, Ontario	MacDonald, D.	MSc Thesis, 1992
Kimberlite indicator mineral chemistry and till geochemistry around the Seed and Triple B kimberlites, Lake Timiskaming, Ontario	McClenaghan, M.B., Kjarsgaard, I.M. and Kjarsgaard, B.A.	CD: GSC Open File 4822
Report of Activities, 2003, Resident Geologist Program: Kirkland Lake District	Meyer, G., Grabowski, G.P.B., Guindon, D.L. and Chaloux, E.C.	OGS Open File Report 6131
The Ontario Geographical Referencing Grid (The Universal Transverse Mercator Grid system)	Ministry of Natural Resources	Report, 1985
Understanding the Choices: The future management of Canada's used nuclear fuel	Nuclear Waste Management Organization	Report
Ontario Airborne Geophysical Surveys, magnetic data, grid data, GEOSOFT® format, Kapuskasing - Chapleau Area	Ontario Geological Survey	CD: OGS Geophysical Dataset 1040b Rev., 2002
ROUND LAKE BATHOLITH AREA Survey: Residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 863 - 81 875 *
ROUND LAKE BATHOLITH AREA Survey: Colour-filled contours of the residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 876 - 81 879 *
ROUND LAKE BATHOLITH AREA Survey: Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 880 - 81 896 *
NORTHWEST TIMMINS AREA: Groundhog River to Frederickhouse River, Terrain-corrected Bouguer gravity and flight paths	Ontario Geological Survey	OGS Map 81 921*
NORTHEAST TIMMINS AREA: Highway 101 Corridor, Terrain-corrected Bouguer gravity and flight paths	Ontario Geological Survey	OGS Map 81 922 *
SOUTH TIMMINS AREA: Peterlong Lake to Whitefish River, Terrain-corrected Bouguer gravity and flight paths	Ontario Geological Survey	OGS Map 81 923 *
NORTHWEST TIMMINS AREA: Groundhog River to Frederickhouse River, First vertical derivative of the terrain-corrected Bouguer gravity	Ontario Geological Survey	OGS Map 81 924 *
NORTHEAST TIMMINS AREA: Highway 101 Corridor, First vertical derivative of the terrain-corrected Bouguer gravity	Ontario Geological Survey	OGS Map 81 925 *
SOUTH TIMMINS AREA: Peterlong Lake to Whitefish River, First vertical derivative of the terrain-corrected Bouguer gravity	Ontario Geological Survey	OGS Map 81 926 *
NORTHWEST TIMMINS AREA: Groundhog River to Frederickhouse River, Shaded digital elevation	Ontario Geological Survey	OGS Map 81 927 *
NORTHEAST TIMMINS AREA: Highway 101 Corridor, Shaded digital elevation	Ontario Geological Survey	OGS Map 81 928 *
SOUTH TIMMINS AREA: Peterlong Lake to Whitefish River, Shaded digital elevation	Ontario Geological Survey	OGS Map 81 929 *
CENTRAL ABITIBI DEVTOR-PORCUPINE-PIPESTONE FAULTS AREA SURVEY: Residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 897 - 81 903 *

Title	Author	Type and Year of Publication[1]
CENTRAL ABITIBI DESTOR-PORCUPINE-PIPESTONE FAULTS AREA SURVEY. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 901 - 81 904 *
CENTRAL ABITIBI DESTOR-PORCUPINE-PIPESTONE FAULTS AREA SURVEY. Colour-filled contours of the residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Map 81 905 *
CENTRAL ABITIBI DESTOR-PORCUPINE-PIPESTONE FAULTS AREA SURVEY. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Map 81 906 *
KIRKLAND LAKE - LARDER LAKE AREA. Residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 936 - 91 941 *
KIRKLAND LAKE - LARDER LAKE AREA. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 942 - 91 947 *
KIRKLAND LAKE - LARDER LAKE AREA. Colour-filled contours of the residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 948 - 91 949 *
KIRKLAND LAKE - LARDER LAKE AREA. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 950 - 91 951 *
LAKE ABITIBI AREA SURVEY. Residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 907 - 81 912 *
LAKE ABITIBI AREA SURVEY. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 913 - 81 918 *
LAKE ABITIBI AREA SURVEY. Colour-filled contours of the residual magnetic field and Keating coefficients	Ontario Geological Survey	OGS Map 81 919 *
LAKE ABITIBI AREA SURVEY. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Map 81 920 *
SHAW DOME AREA. Residual magnetic field and electromagnetic anomalies	Ontario Geological Survey	OGS Maps 81 854 - 81 856 *
SHAW DOME AREA. Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	Ontario Geological Survey	OGS Maps 81 857 - 81 859 *
SHAW DOME AREA. Apparent resistivity and electromagnetic anomalies	Ontario Geological Survey	OGS Maps 81 860 - 81 862 *
Precambrian Geology of BEN NEVIS and KATRINE TOWNSHIPS	Peloquin, A.S.	OGS Map P.3543 *
E3: Environmental Excellence in Exploration	Prospectors and Developers Association of Canada	Report
Report of Activities, 2003, Resident Geologist Program: Southeast and Southwest Ontario Districts and MNR	Sangster, P.J., Farrow, D., Papertzian, V.C., et al.	OGS Open File Report 6132
Report of Activities, 2003, Resident Geologist Program: Thunder Bay South District	Schnieders, B.R., Scott, J.F., O'Brien, M.S., et al.	OGS Open File Report 6129
Lineament extraction from Digital Elevation Model (DEM) for the province of Ontario	Shrestra, T. and Barnett, P.J.	CD-ROM Miscellaneous Release – Data 142
Report of Activities, 2003, Resident Geologist Program: Thunder Bay North District	Storck, M., White, G.D., Magee, M.A. and Kumar, V.	OGS Open File Report 6128
Petrographic, chemistry and diamond characteristics of kelyphitic, fresh and lamproitic dikes at Wawa, Ontario	Stone, D. and Semenova, S.	OGS Open File Report 6134

Title	Author	Type and Year of Publication[1]
Geology and tectonostratigraphic assemblages, EASTERN SACHIGO SUBPROVINCE, Ontario and Manitoba	Stone, D., Corkery, M.T., Hallé, J., et al	OGS Map P.3462 (GSC Open File 1582)
Hudson Bay Platform: Silurian sequence stratigraphy and paleoenvironments	Suchy, D.R.	PhD Thesis, 1992
Mafic - ultramafic intrusions, base-metal sulphides, and platinum group element potential of the Grenville Province in Southeastern Ontario	Wilson, G.C.	OGS Open File Report 5880, 1994

NOTES & ABBREVIATIONS:
GSC: Geological Survey of Canada
** Discover Abitibi Initiative publications*
[1]Publications were issued in 2004 unless otherwise indicated.

Ontario

Ontario Geological Survey
Regional Resident Geologist Program

Timmins Regional Resident Geologist (Sault Ste. Marie District)–2004

by

M. Hailstone and A. Pace

2005

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Timmins Regional Resident Geologist (Sault Ste. Marie District)–2004

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INTRODUCTION

Mineral production from the Sault Ste. Marie District during 2004 consisted of bedrock aggregate from 6 established quarries. A total of 23 individuals and companies are known to have performed mineral exploration and prospecting in the district during the year. IOCG (iron oxide-copper-gold), gold, diamonds and uranium were the major exploration targets in 2004. Other exploration targets included traprock, platinum group metals (PGMs), magmatic copper-nickel sulphides and VMS-style base metals. Details on exploration activity can be found in the following text and by reference to Table 1 and Figures 1 and 2.

QUARRYING ACTIVITY

Production continued from 6 bedrock quarries established in the Sault Ste. Marie District. The quarry locations are shown in Figure 2.

Ontario Trap Rock (A Division of R.W. Tomlinson Limited)

Ontario Trap Rock (map reference A, Figure 2) continued quarrying crushed bedrock aggregate from Nipissing diabase at their operation located 3 km east of the town of Bruce Mines in Plummer Additional Township. R.W. Tomlinson Limited produces approximately 1 million tonnes of high-quality aggregate from this facility yearly for the construction industry.

The operating season begins in March and normally ends in November, with 25 people employed on a seasonal basis. About 90% of the aggregate product is transported by ship from Ontario Trap Rock's deep-water port on Lake Huron, with the remaining product transported by rail and truck. The thousand-acre site contains more than 80 million tonnes of diabase traprock for use in rail ballast, rock wool insulation, high-quality asphalt, concrete and industrial mineral applications. State-of-the-art crushing equipment also allows Ontario Trap Rock to generate cube-shaped materials that are shipped via freighter throughout the Great Lakes region.

Production and sales during the year are governed by market demand, with a production goal pegged at 1 million tonnes in 2004. The quarry has an estimated $2 million impact on the area economy (J. Forbes, Ontario Trap Rock, personal communication, 2004).

Table 1. Exploration activity in the Sault Ste. Marie District in 2004 (keyed to Figure 1).

Abbreviations

Ag	Silver	Pb	Lead
Au	Gold	PM	Precious Metals
Cu	Copper	U	Uranium
Dia	Diamond	Zn	Zinc
IOCG	Iron oxide-copper-gold		

No.	Company Geological (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity (Incentive Program)
1	Artisan Gold Inc.	Buck, Buckles, Joubin (U)	Staking claims
2	Blais, T.E.	Hoggins	Staking claims, prospecting, sampling
3	CanAlaska Ventures Ltd.	Gaushk, Joubin (U)	Staking claims
4	Carter, S.M., Konig G.F.	Aweres, Pennefather (Au)	Prospecting, sampling, staking claims
5	Dan Patrie Exploration Ltd.	Atherson, Chesley (Cu, Au)	Prospecting, sampling
6	Darson Resources Inc.	Long (U)	Prospecting, staking claims
7	Fenwick, K.G.	Nisbet, Norberg (Cu, Au)	Prospecting, staking claims
8	Frankow, P.L.	Null (Au)	Prospecting, sampling
9	Gitennes Exploration Inc.	Esten (Cu, Au)	Induced polarization, sampling, geological mapping
10	Gold Insight Resources Ltd.	Innis (PM)	Prospecting, sampling, staking claims
11	Great Forest Products Corp.	Victor (Silica)	Sampling, geological mapping
12	Hicks, C.R.	Vankoughnet (Pb, Ag)	Prospecting, sampling
13	Lacroix, G.	Nisbet, Vankoughnet (Cu, Au)	Prospecting, staking claims
14	McBride, G.G.	Buck, Gunterman (U)	Staking claims
15	Nokes Exploration Ltd.	Ricard, Aweres, Ryan (IOCG)	Geological mapping, sampling, ground magnetic survey, resistivity survey, airborne magnetic survey, airborne electromagnetic survey
16	Pelke, R.S.	Innis (Au)	Trenching, stripping, sampling
17	Pigott, D.W.	Gisp, Norberg (Au, Zn, Cu)	Staking claims, prospecting, sampling
18	Ralph, Eric	Buck, Norberg, Ryan (Dia, Cu, Au)	Prospecting, sampling
19	Raven Resources Inc.	Biggs (Pb-Zn, Cu)	Prospecting, sampling
20	Shelly, D.G.	Nisbet, Norberg, Palmer, Ryan (Cu, Au)	Prospecting, staking claims
21	Southcott Resources Limited	White	Diamond drilling, kimberlite indicator mineral sampling
22	Tantrum, D. (Heaslip Property)	Ricard (Cu, Au)	Prospecting, sampling
23	Vandine, V. – Morris, P.	Northern, Scranton	Geological mapping

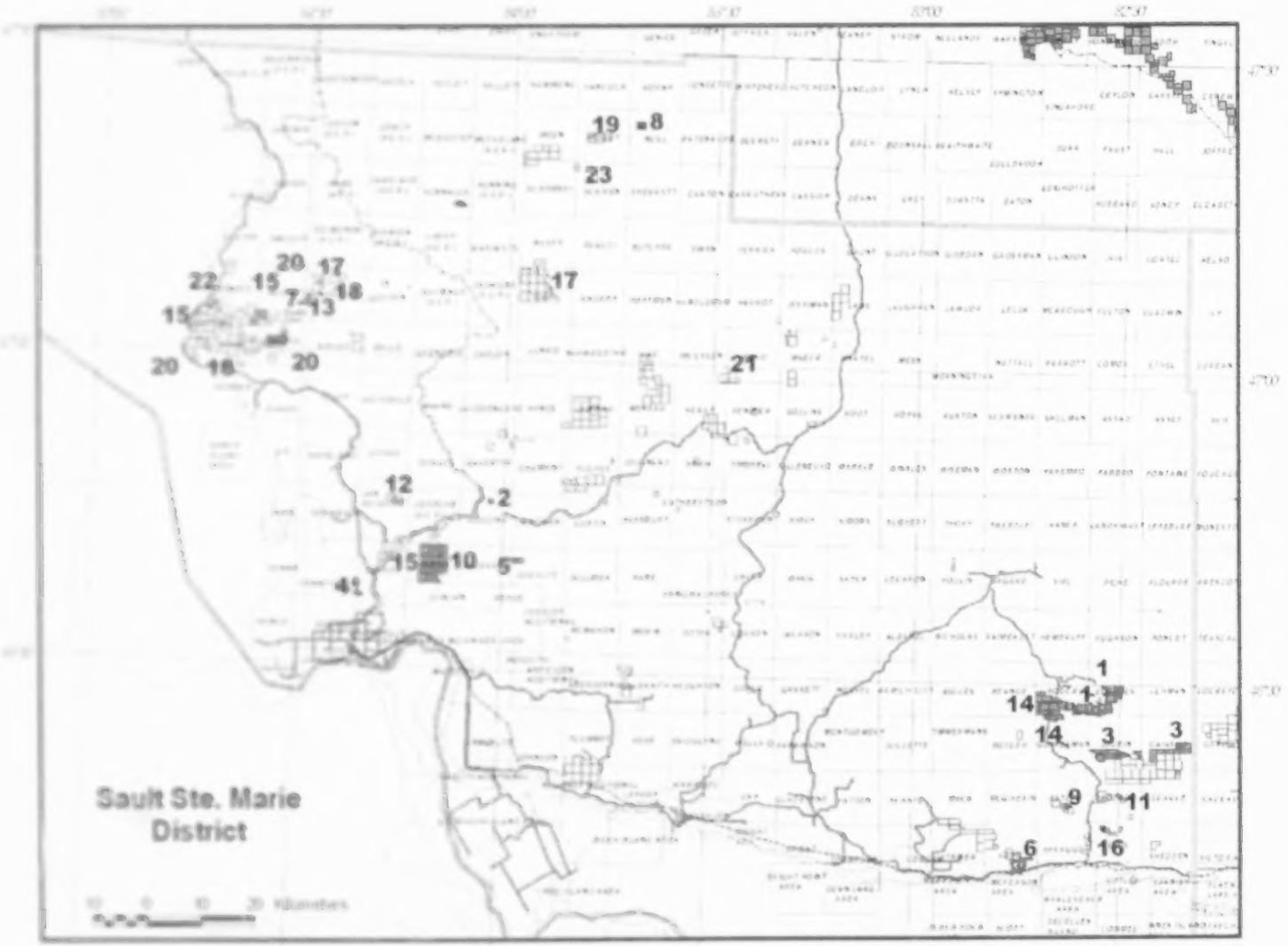

Figure 1. Exploration activity (keyed to Table 1) and staking in the Sault Ste. Marie District between February 5, 2004 (light coloured claims) and new staking as of January 26, 2005 (dark coloured claims). A colour version of this figure can be found at http://www.mndm.gov.on.ca/mndm/mines/lms/roa/default_e.asp

Figure 1 B. Staking activity showing claims that came open (light coloured claims) in the Sault Ste. Marie District between February 5, 2004 and claims currently active as at January 24, 2005. A colour version of this figure can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/roa/default_e.asp

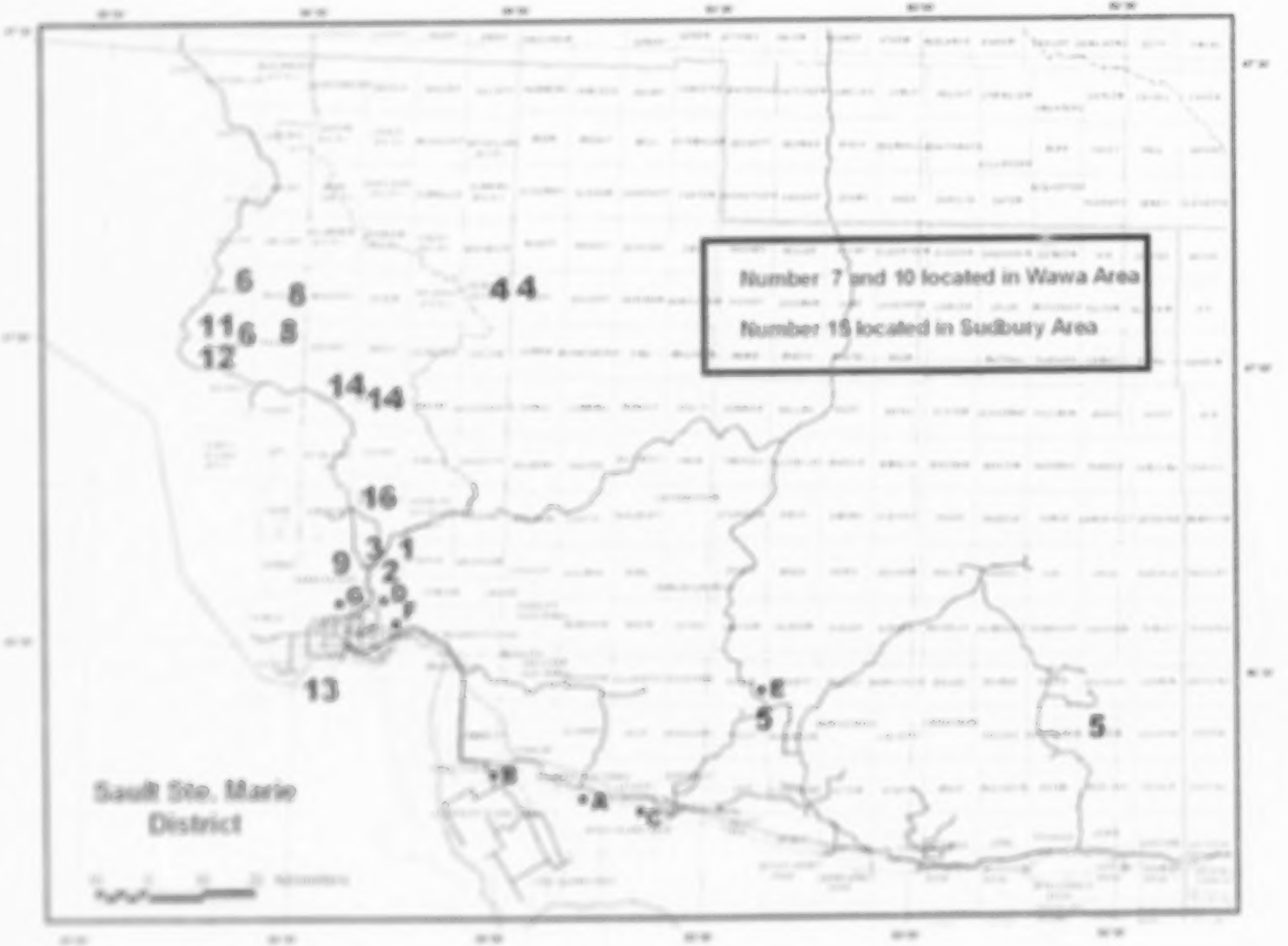

Figure 1 : Property visits and quarry location (keyed to text and Table 4)

Gilbertson Enterprises Quarry

Gilbertson Enterprises (map reference B, Figure 2) of St. Joseph Island operates a quarry east of Highway 548 and south of Highway 17 in Tarbutt Additional Township. The quarried rock is a reddish pink to grey granophyre, a late differentiate typical of Nipissing diabase found in the Bruce Mines area. Several sizes of aggregate and landscaping products are obtained from crushing and screening operations. Production decreased in 2004 to approximately 15 000 tonnes in response to reduced local demand. Deliveries in 2004 were drawn principally from stockpiles and some additional quarrying. In addition to quarrying, Gilbertson supplies equipment and custom crushing services to quarriers throughout northern Ontario (S. Eddy, Gilbertson Enterprises, personal communication, 2004).

Nestorville Quarry

The Nestorville Quarry (map reference C, Figure 2) is located 4 km west of Thessalon, near the town of Nestorville in Lefroy Township. The quarry is operated by Smelter Bay Aggregates. Crushed Nipissing diabase is produced for a number of uses, chiefly rail ballast and quality construction aggregate used in fabricating high-strength concrete. Crushing is accomplished using contracted portable machinery. Production was reduced in 2004 due to poor demand and low product prices.

Root River Sandstone Quarry

Root River Sandstone Quarry (map reference D, Figure 2), operated by E. Koseba, is located in Tarentorus Township within the city limits of Sault Ste. Marie. The quarry produces an attractive red flagstone from Jacobsville sandstone, which is used mostly for stone facing, flag walkways, retaining walls and landscaping. A new market was established in 2002 for sandstone boulders, with shipments to southern Ontario totalling 110 tonnes. Production of flagstone decreased slightly again this year with a total of 60 tonnes extracted during the year (E. Koseba, Root River Sandstone Quarry, personal communication, 2004).

Rancourt Quarry

The Rancourt Quarry (map reference E, Figure 2) is located approximately 41 km north of the town of Thessalon in Gould Township. Quarrying operations commenced in 1999, producing black argillite for use in the construction of fireplaces, walkways, outdoor stairs and patios. Quarrying was suspended during 2002 due primarily to poor market prices (R. Bertolo, Rancourt Quarry, personal communication, 2004).

Brandes Aggregate

Brandes Aggregate quarry (map reference F, Figure 2) is located within the city of Sault Ste. Marie. It has been operational for approximately 30 years. The quarry produces an estimated 10 000 tonnes of bedrock aggregate from granitic gneiss used primarily for road construction and landscaping (P. Caravaggio, Brandes Aggregate, personal communication, 2004).

LaFarge Material and Construction

LaFarge quarry commenced operation in 1999 within the city of Sault Ste. Marie (map reference G, Figure 2). The quarry produces 10 000 tonnes of bedrock aggregate from granite gneiss used primarily for aggregate and landscaping purposes (J. Nelles, LaFarge Material and Construction, personal communication, 2004).

EXPLORATION ACTIVITY

During 2004, approximately 1640 claim units were cancelled in the District (see Figure 1b).

A total of 693 claim units were staked in the Sault Ste. Marie District in 2004. A summary of exploration activity is reported in Table 1. Locations are shown on Figure 1. Since October 2004, approximately 550 claim units have been staked in the Elliot Lake area for uranium.

Five companies contributed approximately $1.3 million to exploration expenditures in the Sault Ste. Marie District during 2004. SouthernEra Resources Ltd. are exploring for diamonds in the area. Nikos Explorations Ltd. are exploring for IOCG (iron oxide-copper-gold) deposits.

SouthernEra Diamonds Inc.

In August SouthernEra Diamonds Inc. announced that its Board of Directors had approved an effective date of September 1, 2004 for implementation of the plan of arrangement. Pursuant to the plan, SouthernEra will continue its diamond business through the current public company, which will be renamed "SouthernEra Diamonds Inc.", and transfer its platinum and gold businesses to a new public company, Southern Platinum Corp. (SouthernEra Diamonds Inc., press release, August 27, 2004).

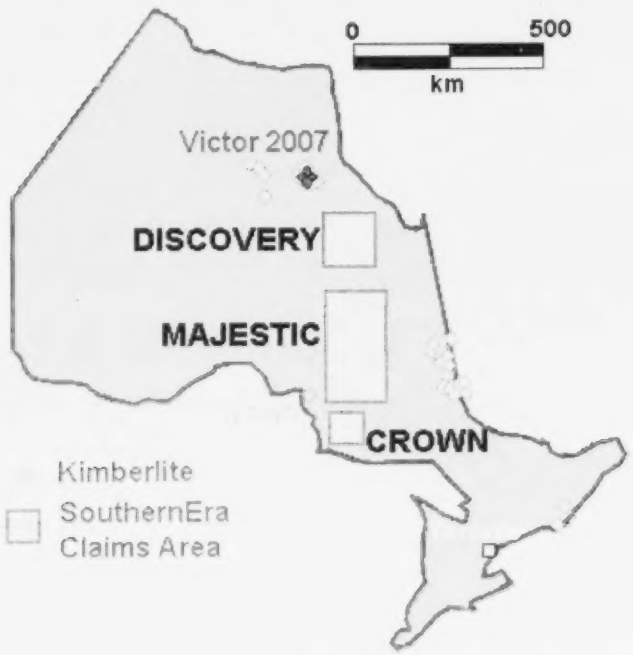

Figure 3. Locations of SouthernEra Diamonds Inc. Superior Craton properties.

The following is an excerpt from the SouthernEra Diamonds Inc. website.

> The Crown project area was extensively sampled during 2002, with the collection of 423 till and 795 geochem samples. A total of 34 airborne geophysical targets were evaluated during 2002, 16 of which warranted further work. During 2003 four targets were drill tested with one target returning one microdiamond from ultramafic rock. Additional stream and till sampling for kimberlitic indicator minerals is proposed for 2004.
>
> During 2002, the Majestic project area was divided into the Majestic North, Majestic South and Kapuskasing area to facilitate till and geochemical sampling. In Majestic North, a total of 173 till and 345 geochem samples were collected and, in Majestic South, 218 till and 440 geochem samples were collected. Positive high interest kimberlitic indicators totaling more than 600 grains have been recovered from the samples processed to date. During 2003, 12 airborne targets were drill tested returning negative results. The focus for 2004 is to continue advancing airborne targets and complete drill testing within areas that have returned positive kimberlitic indicator mineral results. In addition, following positive kimberlitic indicator mineral results recovered from stream and till samples in northern Majestic, two airborne surveys were completed during 2003. Airborne targets generated from the survey will be followed up on during 2004.

By September 30, 2004, SouthernEra Diamonds Inc. had spent $2.75 million to date on their exploration activities in Ontario (SouthernEra Diamonds Inc., second quarter financial report, 2004). Results of the 2004 work program were unavailable at the time of writing.

Nikos Explorations Ltd./Falconbridge Limited - Iron Oxide-Copper-Gold Mineralization at the Island Copper Property

The Island Copper property is located in Aweres Township approximately 12 km northeast of Sault Ste. Marie and is accessible via Hwy 552. The regional geology of the area has been described by Frarey (1977), Bennett et al. (1975) and Bennett, Sawitzky and Whittaker (1976).

Nikos Explorations Ltd. continued mapping, sampling and prospecting on the Island Copper property in 2004. The target of exploration on the property is an iron oxide-copper-gold (IOCG) deposit. The strong association of copper and gold mineralization with iron oxide (in this case specular hematite), and the presence of sodic and potassic alteration are consistent with this exploration model. Other characteristics of IOCG deposits found at Island Copper include:

1. The replacement of magnetite by hematite – magnetite occurs within the core of some hematite grains at Island Copper, reflecting possible replacement.

2. An association with brecciated rocks – granitic and gneissic microbreccia hosts the mineralization at Island Copper.

3. The presence of major crustal-scale faults – the Highway fault, in the south of the property, separates the Archean-aged Gros Cap granite and basement gneiss from Proterozoic sedimentary rocks of the Huronian Supergroup.

4. Magnetic, gravity and chargeability anomalies – coincident chargeability and residual gravity anomalies extend more than a kilometre west of known mineralization at Island Copper, and a subparallel magnetic high occurs immediately to the south.

Nikos recently completed a mobile metal ion (MMI) survey over a portion of the Island Copper property. Four areas that showed anomalous copper in soil in a 2003 MMI survey were selected for a more detailed follow-up survey. Soil samples were analyzed for copper, zinc, cadmium and lead at SGS Canada Inc. in Toronto. Results showed ranges of <5 ppb to 109 500 ppb copper, 34 ppb to 18 220 ppb zinc, <10 ppb to 398 ppb cadmium and <20 to 372 900 ppb lead. The largest copper anomaly covers the Hilltop showing where historical drilling intersected 3.4% Cu and 0.9 g/tonne Au over 11.59 m. The anomaly extends 600 m northwest-southeast and up to 400 m east-west and remains open to the north and south (Nikos Explorations Ltd., press release, October 28, 2004).

Structural mapping and trenching were carried out on the property and completed in November. The structural mapping assessed the control of fault-related structures on the copper-gold mineralization. The trenching program was designed to follow up MMI and selected geophysical anomalies in order to extend the area of known surface mineralization.

The results of historical drilling on the property for which records exist were being incorporated into a 3 dimensional model that will be used together with structural, geophysical and geochemical information to aid in planning future drill programs.

The copper and gold mineralization is hosted by a brecciated albite granite enclosed within brecciated gneiss of Archean age. Two major faults intersect in the southern portion of the property and are believed to control the distribution of the albite granite. Copper-rich breccia-style mineralization, consisting dominantly of chalcopyrite with minor bornite, has been identified on surface intermittently over an area of approximately 450 m by 300 m and occurs within a 1000 m by 400 m envelope of hematite mineralization.

In December 2004, Nikos announced initial results of the stripping and trenching program recently completed on the Island Copper property. Values up to 8.98% copper, 201 g/tonne silver and 2.81 g/tonne gold were obtained from three different 1 m long channel samples in the Hilltop area. Disseminated mineralization, in the form of chalcopyrite and associated specular hematite, occurs in strongly albitized granitic and gneissic rocks. Anomalous copper, up to 0.09%, also occurs in trench areas 2 & 8 and 7, and is associated with specular hematite that is particularly intense in Trench area 7 (Nikos Explorations Ltd., press release, December 23, 2004).

These results are the first of two batches, and cover a portion of the samples from the Hilltop area, and samples from Trench 2 & 8 and Trench 7 (Nikos Explorations Ltd., press release, December 23, 2004).

Area	Sample Interval	Cu %	Ag g/tonne	Au g/tonne
Hilltop Showing	7 m	3.97	7.8	0.78
	Including 1 m	8.98	2.2	1.67
	7 m	1.56	36.7	0.36
	Including 3 m	2.66	13.3	0.54
	10 m	2.15	5.9	0.36
	Including 7 m	3.57	8.8	0.52
	6 m	1.67	7.3	0.37
	Including 3 m	3.21	4.5	0.35
	6 m	1.10	0.7	0.62
	Including 2 m	2.39	0.9	1.63
Trench 2&8	8 m	0.02	0.4	<0.1
	3 m	0.01	0.2	<0.1
Trench 7	4 m	0.03	0.4	<0.1
	4 m	0.03	0.2	<0.1
	5 m	0.02	0.4	<0.1
	8 m	0.02	0.4	<0.1

In February 2005, Nikos announced the second and final batch of results from the stripping and trenching program completed during November 2004 on the Island Copper property. Values of 1.53% copper, 0.25 g/tonne gold and 1 g/tonne silver over 5 m, including a 2 m length grading 2.82% copper, 0.57 g/tonne gold and 1.4 g/tonne Ag, were obtained from the Hilltop area. At Trench area 1E, approximately 150 m east of the Hilltop area, a 3.06 m channel assayed .72% copper, 0.24 g/tonne gold and 1.7 g/tonne silver within a longer 5.11 m interval of 1.18% copper, 0.16 g/tonne gold and 1.6 g/tonne silver. Trench area 3, located approximately 400 m northeast of the Hilltop area, returned 1.03% Cu, 0.11 g/tonne gold and 0.7 g/tonne silver over 1.62 m.

During the work program a total of 168 samples in 30 channels were taken from 6 stripped areas. The copper content of the individual samples ranged from 17 ppm to 8.98%, and 33 of the samples contained more than 1% copper.

Detailed mapping indicates that the mineralization is structurally controlled and that the highest grades are found at zones of intersecting structures, such as observed at the Hilltop occurrence. Chalcopyrite is the main copper mineral, with lesser bornite and rare azurite and malachite, and occurs together with specular hematite and pyrite as clusters, veinlets, disseminated grains and stockworks in altered rock. Granitic and gneissic microbreccia host rocks have been altered to varying degrees. The main style of alteration is albitization (sodium-rich), which is particularly intense in areas of high-grade mineralization. Lesser red potassic feldspar alteration forms discrete zones within the microbreccia throughout the project area (Nikos Explorations Ltd., press release, February 8, 2005).

Nikos Explorations Ltd. – Iron Oxide-Copper-Gold Bellevue Property

The Bellvue property is located in the northeast corner of Aweres Township approximately 15 km northeast of Sault Ste. Marie and is accessible via Hwy 552. The regional geology of the area has been described by Bennett et al. (1975). The Bellevue property consists of 6 claims and is 100% owned by the company.

The Bellevue property covers the Archean-Proterozoic unconformity immediately east of the Island Copper property. Infrastructure is excellent, with both a paved highway and a railway line running through the property.

An unexplained regional magnetic high (approximately 3 km by 3 km) covers most of the property. This anomaly, together with the presence of major faults and hematite, in part replacing magnetite, indicates the property's potential for iron oxide-copper-gold (IOCG) style mineralization.

A 2003 reconnaissance exploration program delineated an area of anomalous nickel, chromium, copper, cobalt and gold in both rocks and stream sediment samples. A second area, outlined by anomalous nickel, copper, cobalt and gold in rock samples, occurs further east within the regional magnetic high.

The nature of the metals comprising these anomalies suggests the possibility of magmatic sulphide mineralization associated with mafic intrusives in the area. Future exploration on the property will test for the presence of such mineralization as well as continuing to explore for an IOCG deposit.

During the summer the property was mapped and sampled in detail.

Nikos Explorations Ltd. – Iron Oxide-Copper-Gold Mineralization at the Coppercorp Property

The Coppercorp property is located in Ryan and Kincaid townships approximately 60 km north of Sault Ste. Marie and is accessible via Hwy 17. The regional geology of the area has been described by Giblin (1973, 1969a, 1969b).

In July, Nikos Explorations Ltd. provided an exploration update on the company's activities on their 42 km^2 Coppercorp property. A mobile metal ion (MMI) soil survey identified 5 areas of anomalous copper with values up to 448 ppm copper stretching over 2 or more lines (>100 m). The anomalies are typically elongate in a northwesterly direction, subparallel to the strike of the underlying rocks. The longest anomaly trends northwest and extends over 1300 m along the eastern side of the grid. The anomaly remains open to the north, south and east. An IP/resistivity survey completed on the Siver Creek South grid has identified 7 chargeability anomalies, 5 of which extend over 2 or more lines. One of the chargeability anomalies is coincident with the 1300 m long MMI anomaly over a 600 m strike length (Nikos Explorations Ltd., press release, July 19, 2004).

During reconnaissance mapping and sampling, the results of two chip samples from the Beaver Pond occurrence were reported to assay 1.6% copper over 1.0 m and 2.84% copper over 0.5 m. A grab sample collected approximately 500 m northwest of the Beaver Pond occurrence is reported to have assayed 6.3% copper (Nikos Explorations Ltd., press release, July 19, 2004).

Nikos has staked a further 70 claim units, covering an area of approximately 1060 hectares, north of the Coppercorp property. These claims cover the northern extension of a regional magnetic high with an associated gravity high.

Such coincident gravity and magnetic anomalies are favorable exploration targets in the search for IOCG deposits (Nikos Explorations Ltd., press release, July 19, 2004).

In December, Nikos provided the following update to exploration on the Coppercorp property.

> Regional scale geological mapping and sampling was completed over an area covering a regional magnetic high (RMH), an airborne magnetic anomaly covering an area approximately 3 kilometres by 3 kilometres.
>
> Copper values up to 2.12% with anomalous gold and silver occur in mineralized Keweenawan-aged basalts within the RMH area. Two samples collected to the west of the past-producing Coppercorp Mine, (21104 and 21105) contained greater than 2% copper with up to 43.6 g/tonne silver and 0.6 g/tonne gold. Sample 21105 also contained 1.38% lead and 2.68% zinc. Copper mineralization consisting mainly of malachite with lesser chalcocite and chalcopyrite is hosted by variably altered, massive and vesicular basalt and is often associated with specular hematite. Epidote and calcite are the main alteration minerals, with potassium feldspar and chlorite being locally abundant.

Highlights of the analyses are summarized below.

Area	Sample ID	Easting	Northing	Cu (%)	Sample Type
RMH	14399	672626	5211205	0.38	Grab
RMH	21011	673333	5209784	0.45	Composite grab
RMH	21017	674127	5209600	0.10	Grab
RMH	21023	673325	5209150	0.12	Grab
RMH	21024	671970	5208874	0.12	1.3 m channel chip
RMH	21036	673325	5209140	0.13	Grab
RMH	21088	672746	5212508	0.24	Grab
RMH	21138	672800	5213915	2.12	Grab
RMH	CC04-2	673678	5210322	0.44	Grab
Coppercorp West	21104	669565	5210518	2.86	Grab
Coppercorp West	21105	669586	5210497	2.05	Grab

Induced polarization and magnetic surveys are currently being completed over the Beaver Pond area, to the southeast of the Coppercorp mine site. Analyses of mineralized basalt and vein breccia from this area, reported in a July 19, 2004 news release, assayed up to 1.6% copper over 1.0 m and 2.84% copper over 0.5 m. Results from the geophysical survey will be used, together with geological information, to plan a drill program for the area in early 2005 (Nikos Explorations Ltd., press release, December 13, 2004).

Gitennes Exploration Inc. Esten Copper-Gold Property - Esten Township

The Esten Copper-Gold property is located in Esten Township approximately 11 km south of Elliot Lake and is accessible via logging road off Hwy 108. The regional geology of the area has been described by Robertson (1970).

The Esten property covers a zone of highly siliceous, chlorite-altered "granitic schist" containing disseminated and fracture-controlled copper mineralization. One outcropping zone of mineralization was drilled in 1956 and again in 1974, resulting in a rough outlining of a small zone with multiple intercepts of 0.2 to 1.7% copper mineralization. The main objective of Gitennes' current programme was to explore the property for larger, concealed zones of mineralization using contemporary geophysical techniques. Gitennes has an option to earn a 100% interest in the Esten property, subject to a 3% NSR royalty.

In November, Gitennes Exploration Inc. reported that a program of ground and airborne geophysics, geological mapping, rock sampling and soil geochemistry had been completed. This work confirmed the zones of copper mineralization found by earlier workers, but failed to identify any additional targets of merit. The company had

declined to exercise its option to acquire the Esten property, and will write-down associated resource expenditures in the fourth quarter of 2004.

From the company's third quarter financial report dated November 15, 2004, expenditures on the Esten property to September 30, 2004 totaled $105 071.00 (Gitennes Exploration Inc., press releases, September 30 and November 22, 2004).

NDT Ventures Ltd. / Troon Ventures Ltd – Troy Gold Occurrence - Tremblay, M. and Robert, J. Option

The Troy gold property is located in Moen Township approximately 64 km southeast of Chapleau. The geology of the area has been described by Wilson (1983) and Grunsky (1991).

In October, Troon Ventures Ltd. announced that it had granted NDT Ventures Ltd. the option to earn up to a 60% interest in the Troy property. Under the terms of the option NDT Ventures can earn a 60% property interest from Troon Ventures Ltd. by paying $75 000.00 in cash, issuing 500 000 shares and incurring $2 million in exploration expenditures over a 5 year period.

NDT Ventures commenced a program of linecutting, geological mapping and sampling, and backhoe trenching, with positive results possibly leading to a drill program.

The 101 claim-unit property is located within the eastern domain of the Batchawana greenstone belt. The property is underlain by Archean tholeiitic mafic and felsic metavolcanic rocks and metasedimentary rocks that have been intruded by diorite dikes and quartz-feldspar porphyry. Several northeast-trending shear zones occur on the property.

Gold was initially discovered on the property in 1999 by prospectors M. Tremblay and J. Robert. Grab samples returned values up to 19 g/t gold. Limited exploration since that time has revealed 5 mineralized zones along a 5 km length of sheared and altered volcanics hosting sulphide-bearing quartz veins. Mafic flows peripheral to the veins are also auriferous. The property is extensively overburden-covered but surface sampling of the limited exposed zones has returned significant gold values ranging from 5.807 g/t to 0.337 g/t gold from grab and chip sampling (Visagie 2004).

The widths and lengths of the known zones cannot be determined due to the overburden cover but soil surveys completed over 2 of the zones have outlined open soil anomalies. Of particular interest is the soil survey conducted on the Troy zone where an open gold-in-soil anomaly measuring 250 m by 60 m returned values up to 5.541 g/t gold. An Ontario Geological Survey airborne geophysical survey flown in 1990 indicates a 3.4 km long trend of EM conductors coincident with the soil geochemical anomaly. NDT reported in their second quarter financial results that by November 30, 2004, a total of $150 882.00 (including acquisition costs) had been spent on the Troy gold property (NDT Ventures Ltd. website; Troon Ventures Ltd., press release, October 28, 2004; NDT Ventures Ltd., press releases, October 28, 2004, January 28, 2005).

G. Luciuk, K. Fenwick and D. Shelly – East Breccia Copper-Molybdenum Prospect

During the year, G. Luciuk, K. Fenwick and D. Shelly continued prospecting and researching their East Breccia prospect, a 20 claim-unit property located in Nicolet and Norberg townships approximately 65 km northeast of Sault Ste. Marie. The property is accessible by logging road that follows Carp River for approximately 28 km north of Hwy 17. The regional geology of the area has been described by Giblin (1973) and Grunsky (1991).

The East Breccia prospect has seen significant past work, including diamond drilling and development of an exploration adit. Mineralization values from the adit include 0.29% Cu and 0.022% MoS_2 over 134 feet (calculated by weighted average over chip samples across each face from the portal to round 20). Diamond drill hole EB-12 returned values of 0.42% MoS_2, 0.21 ounces per ton Ag and Cu at 0.25% are reported over 467 feet.

A unique feature of the East Breccia prospect is the presence of magnetite with chalcopyrite and pyrite as fine-grained disseminations in breccia fragments, and with quartz in microfractures and in the breccia matrix. Molybdenite is associated with epidote and quartz in small veins. Late veins and vug fillings contain quartz, calcite, pyrite, chalcopyrite, ankerite, fluorite, galena, sphalerite, hematite and pyrrhotite (Norman and Sawkins 1985).

Norman and Sawkins (1985) calculated reserves of 125 million tons grading 0.13% Cu and 0.04% MoS_2 (not NI 43-101 compliant). Using these figures and recent prices for copper at US$1.20 per pound and molybdenum at US$34.00 per pound, the partners re-calculated estimates that the East Breccia prospect has a contained metal value of US$1.7 billion. This does not include silver or tungsten values. The extent of mineralization is not defined. The property has excellent access with a new logging road that follows the Carp River to the Tribag Mine and the East Breccia prospect (K. Fenwick, personal communication, 2004).

LAND USE PLANNING ACTIVITY

Staff of the Sault Ste. Marie District Geologist office provided input to the automated Provincially Significant Mineral Potential (PSMP) model for land use planning during the year. Staff also attended the Clegue Forestry symposium in Sault Ste. Marie in April, providing a presentation on mineral exploration interests in partnership with the Resident Geologist program's Northeast Regional Land Use Geologist.

The Sault Ste. Marie District Geologist provided comments on 5 Requests for Withdrawals and reviewed June 1 openings for Mining Lands Branch of the Ministry of Northern Development and Mines. Background information was also provided to S. Kent, Superior Wind Energy Inc., for their proposed wind farms in Prince Township. Input was provided on the Sault Ste. Marie Official Plan to Drow Associates. Input was also provided to Mr. T. Currie, Algoma Highlands Conservancy, on Point aux Mines mineral location and Theano Point mineral occurrences. Staff also provided input on mineral occurrences, geology and abandoned mines sites to the Ministry of Transportation Ontario, regarding highway realignment in the Montreal River area, with comments provided to M. Lum, Eco Plans Limited.

Staff provided comments on the City of Sault Ste. Marie's Waste Management Planning Study being conducted by Totten Sims Hubicki Associates. Staff also provided information on abandoned mines, mineral occurrences and published geological maps and reports to R. Peter of Henderson Paterson Consultants, conducting a phase 1 investigation around Garden River First Nation for Indian and Northern Affairs Canada.

SAULT STE. MARIE DISTRICT STAFF AND ACTIVITIES

The office received 550 visitors and responded to 1599 telephone calls during the year. The drill core storage facility was visited by 43 clients. The larger than normal drill core facility activity was due to visits by 3 groups studying paleo-atmospheric conditions during the early Huronian. Assessment files and publications received in the Sault Ste. Marie office in 2004 are listed in Tables 2 and 4.

In May, S. Butorac resigned her position as District Support Geologist and E. Whitley assumed the job as contract District Support Geologist until August. In October, L. Keen won a competition for District Support Geologist, however she moved on to the Ministry of Environment shortly after. In November, A. Pace assumed the job as District Support Geologist for the Sault Ste. Marie District Geologist office. N. Maville worked as an Experience student for the summer months of May through August, providing technical and administrative assistance to the office. Notably, Ms. Maville was instrumental in developing a fully digital index for assessment work, including raster image maps and accompanying lists in Microsoft® Word, implemented to allow for electronic transfer of assessment work index maps and lists to clients anywhere in the world.

The office provided a Co-operative Education student placement opportunity to one student from Sir James Dunn High School. T. Hawkins worked from February until June assisting with various office functions, including assessment work compilation and filing, participating in Arcview® GIS projects, data assessment and compilation.

Staff of the Sault Ste. Marie District Geologist office completed 13 field visits during the year (see Table 4). An advertised field trip was offered in conjunction with the Sault and District Prospectors Association in June, focusing

on the geology and mineralization of River Gold Mine Ltd.'s Eagle River Gold Mine. Acknowledgements and thanks to G. Manard and other Eagle River staff who provided an excellent tour of the gold-bearing rocks in both underground and surface exposures.

During the first week of August, M. Hailstone led an informal field trip to the Elliot Lake area to examine outcrops for paleo-atmospheric influence during the Huronian. Participating in the field trip were 7 post doctorates from the University of Tokyo, a post doctorate from the University of Colorado and B. Atkinson, Regional Resident Geologist for the Timmins District.

During the year, staff from the office participated in 4 meetings with the Algoma Regional Economic Development Team, Northern Development Division, Ministry of Northern Development and Mines, representing the mineral resource sector.

Table 2. Assessment files received in the Sault Ste. Marie District office in 2004.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
ARA ..... Airborne radiometric survey
Beep ..... Beep Mat survey
Bulk ..... Bulk sampling
DD ..... Diamond drilling
DDH ..... Diamond drill hole(s)
DGP ..... Down-hole geophysics
GC ..... Geochemical survey
GEM ..... Ground electromagnetic survey
GL ..... Geological survey
GM ..... Ground magnetic survey
GRA ..... Ground radiometric survey
Grav ..... Gravity survey
HLEM ..... Horizontal loop electromagnetic survey
HM ..... Heavy mineral sampling
IM ..... Industrial mineral testing and marketing
IP ..... Induced polarization survey
Lc ..... Linecutting
Met ..... Metallurgical testing
OD ..... Overburden drilling
ODH ..... Overburden drill hole(s)
OMIP ..... Ontario Mineral Incentive Program
OPAP ..... Ontario Prospectors Assistance Program
PEM ..... Pulse electromagnetic survey
PGM ..... Platinum group metals
Pr ..... Prospecting
RES ..... Resistivity survey
Samp ..... Sampling (other than bulk)
Seismic ..... Seismic survey
SP ..... Self-potential survey
Str ..... Stripping
Tr ..... Trenching
UG ..... Underground exploration/development
VLEM ..... Vertical loop electromagnetic survey
VLFEM ..... Very low frequency electromagnetic survey

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Aberdeen	F.E. Hollingsworth-Stobie mine	1960	GL, Pr	Donated	SSMP-Aberdeen-10
Aberdeen	John McComber Hanna Mn. Co.	1942	GL, Pr	Donated	SSMP-Aberdeen-11
Aweres	Nikos Exploration Ltd.	2004	GL	Donated	SSMP-Aweres-09
Aweres	R. Moss (Nikos Exploration Ltd.)	2004	AM, GL, Samp	2.27352	SSMP-Aweres-11
Aweres	Nikos Exploration Ltd./Amerigo Resources Ltd.	2002	DD	2.28404	Aweres-SSMP-12
Beange	G.E. Parsons	1968	GL, Pr	Donated	SSMP-Beange-02
Beange	Gemico Mines, Hogg/Chandler	1975	GL, Pr	Donated	SSMP-Bean -03
Deroche	Amerigo Resources Ltd. for G. Luciuk	2004	AM	2.25768	SSMP Deroche-12
Deroche	R. Moss and J. Camier for Amerigo Resources Ltd.	2003	GL, Samp, GC	2.26254	SSMP Deroche-13

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Deroche	Algoma Central and Hudson Bay Railway Co.	1944	Str	Donated	SSMP-Deroche-14
Desbien	Report for Transgold Resources Inc.	1987	Str, Tr, Samp, GM	Donated	SSMP-Desbien-0019
Desbien	J.R. Renault	1962	GL, Samp	Donated	SSMP-Desbien-0020
Gaiashk	McCool Lake Property, R. McGregor	1970	GL, Pr	Donated	SSMP-Gaiashk-12
Gaiashk	JML Resources Ltd.	2003	GL, Samp	2.28642	Gaiashk SSMP-13
Gaudette	B.A. Maclachlan and J.W. Londry	2004	GC, Samp	2.26568	SSMP Gaudette-03
Gunterman	Gemco Mines/Hogg/Chandler/David S. Robertson and Associates Limited	1968	GL	Donated	SSMP-Gunterman-0010
Hughes	R.A. MacGregor	2004	GL, Pr, Samp	2.26463	SSMP Hughes-06
Hughes	Skead Holdings Ltd.	2004	Samp, GM	2.2794	SSMP-Hughes-07
Joubin	D. Hawke	2004	Pr, Samp	2.28134	SSMP-Joubin-15
Kincaid	D. Tortosa	2004	GL, Pr, Samp, Str, Tr	2.26465	SSMP-Kindcaid-18
Korah	A.C.R. Industrial Minerals	1960	GL	Donated	SSMP-Korah-03
Lewis	Algoma Steel Corporation Limited	1937	GC	Donated	SSMP-Lewis-03
Lewis	R.J. Pelky	2003	Pr, Samp	2.28367	Lewis SSMP-04
Lewis	R.J. Pelky	2004	Tr, Str, Samp	2.28847	Lewis SSMP-05
Ley	Exporter of Canadian Forest Products	1944	Tr, DD	Donated	SSMP-Ley-02
Long	Hanna Co.	1965	GL	Donated	SSMP-Long-08
Moen	Troon Ventures Ltd./NDT Ventures Ltd.	2004	GL	Donated	Moen-SSMP-06
Moen and Schembri	Troon Ventures Ltd.	2004	GL, GC, Samp, Str, Tr	2.26922	Moen-05 /Schembri x-ref.
McDonell Location	F.R. Joubin and Associates - Algoma Central Railway	1962	Tr, Samp, GL, DD, GM	Donated	McDonell-0011 Addendum
Multiple twps.	B.W. Smith for Algoma Steel Corp.	1940	Pr, Samp	Donated	SSMP-Villeneuve-02
Multiple twps.	A. Lionel, A. Laframboise	1966	Pr, Samp	Donated	SSMP-Beange-01
Nahwegezhic	Algoma Ore/Algoma Steel	1946	GL	Donated	SSMP-Nahwegezhic-04
Nahwegezhic	Algoma Steel Corp. Ltd., R. Geren	1973	GL	Donated	SSMP-Nahwegezhic-05
Nahwegezhic	Hanna Mining Co	1978	GEM	Donated	SSMP-Nahwegezhic-06
Nahwegezhic	Algoma Ore Properties - Algoma Steel	1963	GL, GM, DD	Donated	SSMP-Nahwegezhic-07
Nicholas	Hanna Mining Co., Hecla Mining Co. of Canada Ltd.	1978	GL	Donated	SSMP-Nicholas-03
Nicholas	Cook Estate Copper Pros.	1968	GL	Donated	SSMP-Nicholas-04
Nicolet	Tribag Mining Company	1965	IP, DD	Donated	SSMP-Nicolet-08
Nicolet	Quonto Ajax Minerals	1963	Met, GL, GM	Donated	SSMP-Nicolet-09
Norberg	O.D. Maurice for Alcourt Mines Limited	1956	GL	Donated	SSMP-Norberg-14
Norberg	Tribag Mine Co.	1966	UG	Donated	SSMP-Norberg-0010-B1
Otter	M.F. Mason	1918, 1967	Pr, GL	Donated	SSMP-Otter-15
Palmer	F.G. Miller	1952	GL	Donated	SSMP-Palmer-36

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Palmer	Pancake Enterprises	1976	AM, GL, DD	Donated	SSMP-Palmer-37
Palmer	Hanna Mining Co.	1953	Samp, Tr	Donated	SSMP-Palmer-38
Palmer	Cliffs of Canada Ltd.	1975	GL, Tr, Samp, DD	Donated	Palmer-0023
Pine	R.J. Morin	2002	Samp	2.27787	Pine-SSMP-01
Proctor	Grant Forest Products Corp.	2004	Samp, GL	2.29019	SSMP-Proctor-01
Runnalls		1964	GM, Grav, AEM	Donated	SSMP-Runnalls-0014
Runnalls	Rio Tinto Canadian Exploration Ltd. - Algoma Central Railway	1965	GM, Tr, GL	Donated	Runnals-0015-A1
Runnalls	Echo Bay Mines Ltd.	1990	GL, GM, DD, Tr, AM, AEM	Donated	SSMP-Raaflaub-01
Runnalls	Dryden Resources Inc.	1985	DD, Tr, AEM	Donated	SSMP-Raaflaub-03
Running	Spruce Lake Exploration Company	1972	Tr, DD	Donated	SSMP-Running-03
Ryan	Coppercorp Ltd.	1965	GL	Donated	SSMP-Ryan-14
Ryan	Algoma Steel Corporation Ltd., Sinclair, D.B.	1972	DD, Samp	Donated	Ryan-0020-A1
Ryan	Nikos Explorations Ltd.	2004	AM, AEM, Grav	2.27827	SSMP-Ryan-15
Ryan	Nikos Explorations Ltd.	2004	RES	2.27946	SSMP-Ryan-16
Ryan	T. O'Connor	2004	Samp	2.27715	SSMP-Ryan-17
Ryan	Nikos Explorations Ltd.	2004	GL, Samp, GM	2.27947	Montreal Mining Location-SSMP-15
Sault Ste. Marie, City of	Duncan R. Derry Limited	1970	DD, ARA, GM	Donated	Sault Ste. Marie general file
Schembri	Hanes Lake Copper and Zinc Properties	1971	GL	Donated	SSMP-Schembri
Schembri and Scriven	V. Verdun, P. Morra	2004	GL	2.28075	Schembri-SSMP-02
Shields	Hanna Mining Co.	1911	Str	Donated	SSMP-Shields-01
Striker	J. Daley	1943	Pr, Samp	Donated	SSMP- Striker-02
Vibert	R.J. Anderson	1973	GM	Donated	SSMP-Vibert-06
Way-White	H.O. Seigel	1962	AM, AEM, DD, Tr, Samp	Donated	SSMP-Way-White-07
Wlasy	Hanna Mining Co.	1942	GL	Donated	SSMP-Wlasy-04
Wlasy	Hanna Mining Co.	1966	GL	Donated	SSMP-Wlasy-05
Wlasy	Hanna Mining Co.	1950		Donated	SSMP-Wlasy-06

Table 3. Published reports, maps, theses and separates received by the Sault Ste. Marie Distict Geologist office in 2004.

Title	Author	Type and Year of Publication
Report of Activities 2003, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts	Atkinson, B.T., Hailstone, M., Seim, G.Wm., Wilson, A.C., Draper, D.M., Butorac, S. and Cooper, G.R.	Ontario Geological Survey, Open File Report 6130, 2004
Report of Activities 2003, Resident Geologist Program, Regional Land Use Geologist Report: Northwestern, Northeastern and Southern Ontario Regions	Debicki, R.L., Drost, A.P., Fraser, R.J., Rowell, D.J. and Yule, G.R.	Ontario Geological Survey, Open File Report 6133, 2004
Report of Activities 2003, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Sudbury District	Cosec, M., Gaudreau, J.M., Selway, J.B. and Beauchamp, S.A.	Ontario Geological Survey, Open File Report 6139, 2004
A comparison of selective leach signatures over kimberlites and other targets	Burt, A.K. and Hamilton, S.M.	Ontario Geological Survey, Open File Report 6142, 2004
Summary of Field Work and Other Activities, 2004	Baker, C.L., Debicki, E.J., Kelly, R.I., Parker, J.R., Ayer, J.A. and Easton, R.M.	Ontario Geological Survey, Open File Report 6145, 2004
A consistent record for the rise of atmospheric oxygen [Abstract]	Bekker, A.	AbSciCon 2004, NASA Ames Research Center, Moffett Field, CA. International Journal of Astrobiology, Supplement 1 (March): 42.
Dating the rise of atmospheric oxygen	Bekker, A., Holland, H.D., Wang, P.-L., Rumble III, D., Stein, H.J., Hannah, J.L., Coetzee, L.L. and Beukes, N.J.	Nature, v.427, p.117-120.
Proterozoic mantle xenoliths in ultramafic dykes near Wawa, Ontario: implications for the lithospheric mantle underneath the central North American craton	Stefan, L.A. and Francis, D.	Abstracts with Programs - Geological Society of America, v.36(5), p.47.
The Archaean atmosphere, hydrosphere and biosphere	Ohmoto, H.	Developments in Precambrian Geology, v.12, p.361-388.
Rises and falls of the atmospheric oxygen in early Paleoproterozoic	Pavlov, A.A. and Bekker, A.	Abstracts with Programs - Geological Society of America, v.36(5), p.256.
Earth's two great Precambrian glaciations: aftermath of the "Snowball Earth" hypothesis	Young, G.M.	Developments in Precambrian Geology, v.12, p.440-448.
Mass-independent isotopic fractionation of sulfur from sulfides in the Huronian Supergroup, Canada	Tachibana, S., Hirai, T., Goto, K., Yamamoto, S., Kirschvink, J.L., Kopp, R.E., Ohkouchi, N., Isozaki, Y., Tada, R., Tajika, E., Kita, N.T. and Morishita, Y.	LPI Contribution, No.1203, p.62.
Optically stimulated luminescence dating of late Holocene strandplain sequences adjacent to Lake Superior	Argyilan, E.P., Forman, S.L. and Johnston, J.W.	Abstracts with Programs - Geological Society of America, v.36(5), p.287.
Geological guidebook to the Paleoproterozoic East Bull Lake intrusive suite plutons at East Bull Lake, Agnew Lake and River Valley, Ontario	Easton, R.M., Jobin-Bevans, L.S. and James, R.S.	Ontario Geological Survey, Open File Report 6135, 84p.
Using xenotime U-Pb geochronology to unravel the history of Proterozoic sedimentary basins; a study in Western Australia and the Lake Superior region	Vallini, D.A., McNaughton, N.J., Rasmussen, B., Fletcher, I. and Griffin, B.J.	Proceedings and Abstract-Institute on Lake Superior Geology, May 2003, v.49, pt.1, p.79-80.

Table 4. Property visits completed by the Sault Ste. Marie District office in 2004 (keyed to Figure 2).

Number	Property/Occurrence	Location
1	Island Copper prospect	Aweres Township
2	Aweres Formation outcrops around Upper Island Lake area	Aweres Township
3	Trout Lake and Hillman occurrences	Aweres Township
4	Outcrops along new MacDonald Creek Road	Desbiens and Gapp townships
5	Lower Huronian outcrop exposures and quartz-pebble conglomerate, and dropstones in upper Gowganda fine siltstones	Joubin Township and northeast corner of Wells Township
6	Mamainse Mine collecting samples of basalt and flow-banded rhyolite with domeykite and pebbles for Sudbury Prospectors and Developers Association	Kincaid and Ryan townships
7	Resident Geologist Program diamond field trip in the Wawa area and showing Nicholson dike to P. Hinz and A. Lichtblau	Lalibert, Menzies, Musquash, Lendrum and Rabazo townships
8	Exposures along new Gimlet Creek road accessing Tribag Mine and East Breccia prospect	Palmer and Nicolet townships
9	Outcrop exposure on new road accessing regional vertical gradient gravity high	Pennefather and Korah townships
10	Paint Lake Road and Eagle River Deposit Sudbury Prospectors and Developers Association field trip	Point Isacor Area
11	Coppercorp Mine and vicinity	Ryan Township
12	Daisy stone outcrops along the shoreline in Kincaid Township	Kincaid Township
13	Jacobsville sandstone exposures at Root River sandstone quarry	Tarentorous Township
14	Checking outcrop exposures along new George Schmidt logging road for Keweenawan felsite	Tilley and Archibald townships
15	Gord Salo property at Panache Lake	Truman and Dieppe townships
16	Prace Mine collecting galena samples for Laurentian University	Vankoughnet Township

RECOMMENDATIONS FOR EXPLORATION

Uranium and Gold in the Elliot Lake Area

The spot price of uranium has doubled over the last 2 years and now sits at US$21 (February 7, 2005, Ux Weekly Spot Prices). For this reason, there has been a renewed interest in the Elliot Lake camp, particularly with a view to utilizing In-Situ Lixiviation (ISL) extraction methods.

Between 1958 and December 1989 the Elliot Lake camp produced 134 450 tonnes of uranium with an average recovered grade (including mine water and leaching) of 0.09% uranium, or 2.1 pounds U_3O_8/ton (Bennett, Dressler and Robertson 1991). Agnew Lake Mine produced an additional 752 tonnes of uranium by underground and surface leaching from their operation in Hyman Township, 50 km west of Sudbury (Bennett, Dressler and Robertson 1991).

In the Elliot Lake area, uranium as uraninite and brannerite is hosted by northwest-trending paleo-channels of uraniferous and pyritic quartz-pebble conglomerate at the base of the Matinenda Formation.

Ontario Geological Survey Map 2419 (Giblin and Leahy 1979) outlines approximate ore assay boundaries of uraniferous quartz-pebble conglomerate projected vertically to surface in the Elliot Lake area. Published details on Elliot Lake uranium reserves can be found in Robertson (1986).

This recommendation was prepared for the Manitoba Mines and Minerals symposium in November, 2004. Several areas along the north and south limb of the Quirke syncline were open for staking at that time. Since then, and at the time of writing this report, virtually all of the available ground on the north and south limb of the Quirke syncline has now been staked. Lithogeochemical surveys for gold should be a part of any exploration program carried out on pyritic, uraniferous quartz-pebble conglomerates of the Matinenda Formation.

New Access Roads in the Batchawana Greenstone Belt

The Batchawana greenstone belt is probably one of the most accessible in the province, yet it is under-explored for gold. New forest access roads have increased access to the east part of the belt from Highway 101 near Chapleau. New logging roads also provide access to the east side of the eastern subdomain of the Batchawana greenstone belt from the Whitman dam into Scriven, Schembri, Wlasy, Gapp, Way-White and Lunkie townships. New roads also access Tronsen Township from the Montreal River road crossing the CN railway line at Rand. Many of these new roads access areas delineated in 2003 as favourable for gold mineralization (Hailstone and Butorac 2004).

Copper-Nickel-PGE, Bedrock Aggregate in the Batchawana Greenstone Belt

New logging roads leading north along the Chippewa River to Batchawana Station are also currently being established east of Wart Lake up to Old Man Lake in Vibert Township. Traverses made in this area during the 2003 field season and roads accessing the area can be found on Figure 6 in Hailstone and Butorac (2004). This road system also provides new exposures of the Mongoose Lake gabbroic intrusion. This intrusion needs to be evaluated for its nickel-copper and PGE potential. Significantly, this intrusion is not far from the railroad at Summit. Some testing should be done to see if bulk sampling of the intrusion would provide a suitable form of bedrock aggregate - traprock.

Gold in the Batchawana Greenstone Belt

Magnetite iron formation with characteristics similar to the Geraldton greenstone belt have documented gold occurrences associated with sulphidization at the Pancake Lake iron formation in Palmer Township, at Mine Pond in Davieaux Township and on the Goulais River iron formation in Nahwegezhic and Gapp townships. Small, isolated magnetite-chert interbeds occur in several other places northeast of Runnalls Township, east of Wart Lake in Vibert Township and near the southern boundary of the mafic volcanic sequence in Schembri Township. These magnetite iron formations have not been extensively evaluated for their gold potential.

Table 5. Compilation of recommendations for exploration made in past years by Resident Geologist Program staff in Sault Ste. Marie (keyed to Figure 4). MP = Miscellaneous Paper; OFR = Open File Report.

No.	Author (year)	Report of Activities (publication/page)	Recommendations/Township
1	R.J. Rupert (1972)	MP 50, p.104	Kabinakagami Lake region, 25 km north of Dubreuilville. Mafic to ultramafic intrusives intrude macro breccia zone. Anomalous titanium, chrome and abundant biotite suggest petrographic affinity with kimberlites.
2	R.J. Rupert (1973)	MP 54, p.88	Northwest Viel Township. Cu prospect associated with northwest-trending Nipissing diabase. Glacial till cemented by 1-3 inch layer of malachite and traced for 1000 feet. Drilling on IP anomaly yielded values of 1.7% Cu.
3	R.J. Rupert (1973)	MP 54, p.89	Gaudette Township. Block faulting cross-cuts a heavily mineralized northeast shear zone. Coarse white quartz lenses conform with the shear and contain patches of molybdenite, pyrite and chalcopyrite. This radioactive structure is favourable for Cu, Mo and Ni. Rock grab samples yielded 0.83% Ni and 5.38% Cu. A geochemical survey contained assays high in heavy metals.

No.	Author (year)	Report of Activities (publication/page)	Recommendations/Township
4	G. Bennett and E.J. Leahy (1980)	MP 91, p.99	Vankoughnet Township. The argentiferous galena occurrences in the area have a high potential value, which increases with Ag prices. One particular occurrence is the Prace Mine, which encloses a northwest-striking galena vein, strongly anomalous in Ag and low alpha lead used in the electronics industry. The vein is in a shear zone, which for most of its length separates Nipissing gabbro from the laminated argillite of the Gowganda Formation.
5	G. Bennett and E.J. Leahy (1981)	MP 95, p.133 and 137	Hughes Township. There seems to be a close spatial association between base metal-Ag occurrences and dike rocks of Keweenawan age, especially felsite and lamprophyre. This association may be simply structural in that the deposits, namely argentiferous galena, lead, copper and zinc, occupy linear trends of N10W. The distinctive bright pink to red-coloured felsite and dark inclusion-bearing lamprophyre are relatively uncommon and should be considered a plus factor in considering areas for prospecting. Please note the linear trends may not parallel the strike of the individual veins.
6	G. Bennett (1983)	MP 107, p.149 and 150	Aweres Township. Radioactive quartz-pebble conglomerate found near or at the base of the Thessalon Formation between Sault Ste. Marie and the northeast part of the Quirke Lake Syncline contain numerous anomalous Au values of up to 600 ppb. Also, in Day Township, samples from the same stratigraphic position returned assays of 4300 and 320 ppb Au. The magnitude and potential cannot be determined from the few analyses available so far.
7	G. Bennett, E.J. Leahy and K.D. Booth (1985)	MP 122, p.218	Davieux Township. Evidence suggests there is a direct relationship with Au occurrence and primary magnetite presence in lean iron formation. Past drilling has returned up to 0.15 oz/ton Au, and channel samples average 0.137 oz/ton Au, along with anomalous geochemical sampling.
8	G. Bennett, E.J. Leahy and K.D. Booth (1985)	MP 122, p.227	From Goulais Bay to Elliott Lake, within the Huronian Supergroup, selected outcrops have a variety of colours, textures and exhibit distinct structures. These make an attractive ornamental stone and the integrity and dimension of these outcrops remain to be measured.
9	G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa (1986)	MP 128, p.253	Vankoughnet Township. While examining the area for industrial mineral potential, the authors noted black granite outcrop with the dimension of 10 km x 1 km x 66 km.
10	G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa (1987)	MP 134, p.237	Olsen and southern Tronsen townships. Rampart Resources and Massive Energy carried out geochemical sampling, prospecting, mapping and drilling over pyritic iron formation. This structure was traced for 5 miles in an east-west direction. Assays from drilling returned values of 0.525 oz/ton Au over 4.1 feet and 0.048 oz/ton Au over 10.1 feet.
11	G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa (1987)	MP 134, p.244	Prince Township. Building stone: red granite and monzonite. Large deposit over 4 km^2. The deposit is homogenous, no deleterious minerals or staining and is good for building or monumental stone. Wells Township. Nipissing diabase-black granite. Another large deposit which is homogenous and dimensions need to be measured.
12	G. Bennett, E.J. Leahy and J. Walmsley (1992)	MP 158, p.223	Hughes Township. Mineralized breccia zone within granite gneiss. Shear zone cross-cutting, consists of diabase fragments, quartz stringers and carbonate. 10-15% mineralization includes sphalerite, pyrite, galena, chalcopyrite and pyrrhotite. Cu values range from 0.05-4%, Zn from 1-13%, Pb from 1-7%, Ag from 1-2000ppm.
13	G. Bennett, E.J. Leahy and J. Walmsley (1992)	MP 158, p.225	Fenwick Township. Barite in dolostone associated with stratabound Cu occurring at the base of the Gordon Lake Formation. Mineralization includes very fine-grained pyrite and specular hematite. The depositional environment is suitable for base metal concentration.
14	G. Bennett, E.J. Leahy, J. Walmsley and M. Hailstone (1993)	MP 161, p.225	Montreal Mining Location. Domeykite occurrence within felsite intrusion on Hwy 17, 50 km north of Sault Ste. Marie. The copper arsenide occurs within fractures.
15	G. Bennett, E.J. Leahy, J. Walmsley and M. Hailstone (1993)	MP 161, p.230	Batchawana greenstone belt remains a prime area for mineral exploration as well as greenstone belts in Deroche, Shields and Gaudette townships.
16	G. Bennett, M. Hailstone and B. Fremlin (1995)	OFR 5921, p.250 and 251	Northeast corner of Ryan Township. The Richards Haugeneder gold occurrence is an example of gold associated with Archean-hosted iron formation within the northern margins of the Batchawana greenstone belt. There are similarities to the Geraldton greenstone belt.
17	G. Bennett, M. Hailstone and B. Fremlin (1995)	OFR 5921, p.251	45 km north of Blind River, the Flack Lake fault has potential for Cu mineralization. This fault is thought to be a reverse thrust on the north side of the Huronian supracrustal belt. The basalts in this structure are known to contain anomalous Cu mineralization.
18	M. Hailstone and P. Morra (1998)	OFR 5972, p.11	Day Township. Gold associated with basal pyritic units of the Livingston Creek Formation.

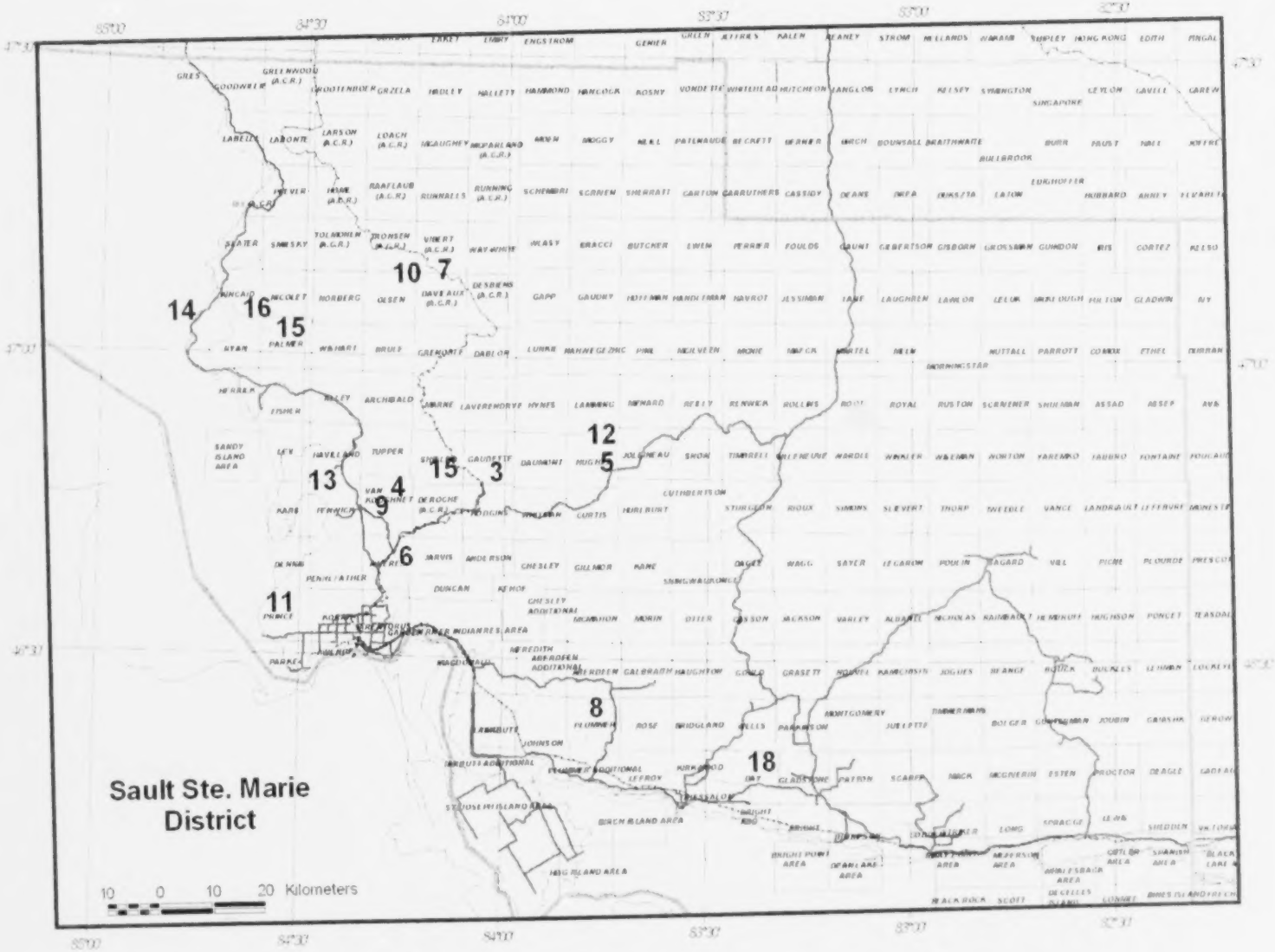

Figure 4 : **Recommendations for Exploration Locations (Keyed to Table 5)**

Table 6. Mineral deposits not being mined in the Sault Ste. Marie District in 2004.

Abbreviations

AF	Assessment Files	MLS	Mining Lands, Sudbury
CMH	Canadian Mines Handbook	MR	Geological Survey of Canada Publication
GR	Geological Report	NM	The Northern Miner
MDC	Mineral Deposits Circular [No 15–] [*formerly* Mineral Resources Circular, No 1-14]	OFR	Open File Report
MDIR	Mineral Deposit Inventory Record	PC	Personal Communication

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Pater Mine Spragge Tp 41J/2	Cu, Au, Ag	936 670 T @ 1.8% Cu	Rio Algom Limited	MR 1087	Past Producer 1969-1970
Bar-Fin Mine Thompson Tp. 41J/3	Cu	1906- 130 foot shaft with 250 feet lateral work	Staked	MR 1087	Past Producer 1906
Bald Dome Prospect Plummer Add. Tp. 41J/5	Cu	680 388 T @ 0.25% Cu		MR 1087	Inactive
Bruce Mines Plummer Add. Tp 41J/5	Cu, Ag	40 000 T @ 1.8% Cu above 155-foot level		MDC 12	Past Producer 1915-1921
Campbell–Dukes Prospect Plummer Add. Tp 41J/5	Cu	33 000 T @ 1.2% Cu in 230 ft by 8 ft by 220 ft block		MR 223	Past Producer 1956
Rock Lake Mine Aberdeen Tp 41J/5	Cu, Ag	1898-1903- 420 foot shaft with 3 levels and 606 feet lateral development		MDC 12	Past Producer 1901-1903
Havilah Mine – Ophir Mine Galbraith Tp 41J/5	Au, Ag, Cu	1 main vein, 2 – 150 foot shafts, 1 – 183 foot adit		MDC 12	Past Producer 1892-1922
Steinberg Mine Plummer Add. Tp 41J/5	Cu	47 000 T @ 1.82% Cu or 124 000 T @ 1.1% Cu (drill indicated)		AF	Past Producer 1906 and 1956
Stobie Mine – Rainbow Mine Johnson Tp 41J/5	Cu, Ni, Au	9 T of ore shipped from 1 – 160 foot shaft with 20 feet of lateral workings		MDC 12	Past Producer 1899-1901
Bilton Option Patton Tp 41J/6	Cu	453 593 T @ 1.7% Cu	N/A	MR 1087	Past Producer Pre 1956
Boyea Lake Adit and East Zones Montgomery Tp 41J/6	Cu	Adit Area - 128 000 T @ 1.95% Cu probable and possible to 200 feet. East Area - 56 500 T @ 2.98% Cu drill indicated to 250 feet	N/A	Sudbury Contact Mines AR 1971	Past Producer Pre-1942
Crownbridge (Cannon) Prospect Kamichisitit Tp 41J/6	Cu	415 000 T @ 1.8% Cu diluted grade	N/A	MDC 12	Past Producer 1966-1967
Glagoma Mine Gladstone Tp 41J/6	Cu	1917- 2 shafts sunk to 250 feet		MDC 12	Past Producer 1917 and 1962
Goulding Mine Cobden Tp 41J/6	Cu	1962- 816 T @ 1.4% Cu shipped from mine		MDC 12	Past Producer 1962
North Montgomery - Grand Portage Mine Montgomery Tp 41J/6	Cu	147 677 T @ 1.7% Cu – Main Zone 409 000 T @ 1.96% Cu – No 1 Zone 77 063 T @ 3.23% Cu – No 2 Zone 61 688 T @ 1% Cu – West Zone	N/A	MR 1087	Inactive

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Milgate (Abbican) Prospect Nouvel Tp 41J/6	Cu	95 934 T @ 1.08% Cu (drill indicated) A Zone L-600 ft by W-10 ft by D-235 ft		MR 1087	Inactive
Principle Strategic Minerals Prospect Gladstone Tp 41J/6	Cu	112 300 T @ 1.54% Cu (drill indicated)		NM MDC 12	Inactive
Sheba Prospect Nouvel Tp 41J/6	Cu	L-1000 ft by W-3 ft on surface @ 0.59% Cu	N/A	MDC 12	N/A
Twin Lakes Prospect Esten Tp 41J/7	Cu	Probable - 76 900 T @ 1.73% Cu over 8.04 feet	N/A	MDC 12	
Bi-Ore Mine Sagard Tp 41J/10	Cu	13 607 T @ 6% Cu	N/A	MR 1087	Past Producer 1947-1949
Cheney Mine Gould Tp 41J/11	Cu	39 405 T @ 3.97% Cu (drill indicated)	N/A	MDC 12	Past Producer 1966-1967
Copper Prince Mine Kamichisitit Tp 41J/11	Cu, Au	45 359 T @ 3% Cu, 4 ore shoots near surface		MR 1087	Past Producer 1972
Jardun Mine Jarvis Tp 41K/9	Pb, Zn, Ag, Cu, Au	49 367 T @ 4.4% Pb, 3.1% Zn, 1.42 oz/T Ag	N/A	MDC 12	Past producer 1954-1957
Kerr Scott Deroche Tp 41K/9	Pb, Zn, Ag, Au	1859 T of hand-cobbed ore recovered Deposit reserves have not been calculated		MDC 12	Past Producer 1939
Goulais River VanKoughnet Tp 41K/11	Cu, Ag	250 000 T @ 2.35% Cu, 0.26 oz/T Ag in 3 zones (drill indicated)	N/A	MR 223	Past Producer 1975 and 1981
Kristina Mine LaVerendrye Tp 41K/11	Cu	369 350 T @ 1.95% Cu in No 4 and No. 6 shaft zones	N/A	MDC 12 MR 223	Past producer 1903-1907
Prace–Sill Lake Mine VanKoughnet Tp 41K/16	Pb, Zn, Ag	340 T Pb, Ag concentrate produced. Deposit reserves have not been calculated.	N/A	PC	Past Producer 1981 and 1985-1987
Caputo–Just Wishart Tp 41N/1	Cu	475 T @ 11.18 % Cu recovered from 3 zones		MDC 12	Past Producer 1968
Coppercorp Mine Ryan Tp 41N/2	Cu, Ag, Au	1 360 777 T @ 1.7% Cu in C Zone 362 873 T @ 2.3% Cu in C-2 Zone 589 670 T @ 2.1% Cu in SB Zone 444 520 T @ Cu in Silver Creek Zone	N/A	MR 1087	Past Producer 1964-1972 1 M Tons recovered
Glenrock Palmer Tp 41N/2	Co, Au, Cu	Several zones – main zone L-250 ft by W-3.5 ft (drill indicated)		MR 1087 MDC 12	
Jogran Prospect Ryan Tp 41N/2	Cu, Mo	L-600 ft by W-400 ft by D-680 ft @ 0.053% MoS_2, 0.19% Cu (drill indicated)		MDC 12 MR 223	
Mamainse Mine Ryan Tp 41N/2	Cu	Vein L-1500 ft by W-13 ft 3 shafts sunk to depths of 60, 280 and 1500 feet		MDC 12	Past Producer 1882-1884
Maricona Prospect Slater Tp 41N/2	Cu	267 986 T @ 1.17% Cu reserves in 3 sections		MDC 12	
Pancake Lake Kincaid Tp 41N/2	Cu	L-300 ft by W-21.5 ft by D-200 ft @ 0.76% Cu (drill indicated)		MR 1087	

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Tribag Mine Nicolet Tp 41N/2	Cu, W, Ag, Au	2 267 961 T @ 1.6% Cu – Breton Zone 113 397 092 T @ 0.13% Cu, 0.27% Mo – East Breccia Zone 429 688 T @ 1.6% Cu – West Breccia 929 864 T @ 2.3% Cu – H Zone 907 184 T @ 0.2% W in Tailings – H Zone	Channel I	MR 1087 MDC 12	Past Producer 1967-1973 Production from Breton and West Breccia zones

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Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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